United States Department of the Interior
OFFICE OF SURFACE MINING
Reclamation and Enforcement
BROOKS TOWERS
1020 15TH STREET
DENVER, COLORADO 80202

December 1, 1982

DEC 06 1982
DIVISION OF OIL, GAS & MINING
File ACT/015/008
JIM
DEC 06 1982
Copy to CY,
EV,

To All Interested Parties:

A public meeting was held in the Carbon County Courthouse, Price, Utah, on November 3, 1982, to aid the Office of Surface Mining (OSM) in making a decision on the necessity of preparing a site-specific environmental impact statement (EIS) for Kaiser Steel Corporation's South Lease underground coal mine. In addition to the 2 OSM representatives, 24 other people attended the meeting.

Of the four persons who made a statement at the meeting, three expressed the belief that an EIS on the proposed mine was not necessary. Mr. Dan Hunter, Emery County, and Mr. Richard Walker, Carbon County, spoke on behalf of their respective counties and stated that they had signed a memorandum of understanding with the company which provided socioeconomic safeguards for the counties. They both felt that an EIS was not necessary and that there would be no overwhelming socioeconomic impacts which could not be mitigated.

Ms. Denise Dragoo, legal counsel for Kaiser Steel, described the extent of EIS coverage in the area which had addressed the proposed South Lease mine. Because of prior regional coverage of the area and because the mine-plan application had already been approved by the Utah Resource Development Coordinating Committee, she recommended that no EIS be prepared.

Mr. E. S. Crawford, who represented surface landowners, recommended that an EIS be prepared. His concern was that information on hydrology (water rights, impacts to users, and quality and quantity data), geology, subsidence, and impacts to surface users from the acreages removed by road construction were not adequately addressed in the South Lease mine-plan application.

In reaching a decision on National Environmental Policy Act (NEPA) compliance with regard to the proposed South Lease mine, OSM will take into consideration these comments, and its own internal review of the mine-plan application and existing EIS coverage of the area.

On the basis of all this information, OSM has made a preliminary determination that the new evidence does not support, at this time, a decision to prepare a site specific EIS on the proposed South Lease mine. However, OSM's decision not to prepare an EIS at this time should not be construed to mean that an EIS will definitely not be written. An environmental assessment (EA) will be written by OSM during the final technical analysis stage of the mine-plan-application review and approval process. The purpose of the EA will be to conduct a thorough environmental analysis of the mine plan and to make the final decision on whether an EIS is necessary. Should an EIS be deemed necessary, a notice of intent to prepare the EIS will be published in the Federal Register, and public notices will be printed in local newspapers.

OSM's technical analysis of the mine-plan application will address environmental parameters, including the areas of concern expressed by Mr. Crawford. During the technical analysis, the mine plan will be critically reviewed by OSM to ensure compliance with the environmental protection measures of the Surface Mining Control and Reclamation Act of 1977 and the regulations. Any deficiencies in the mine plan must be corrected by requiring Kaiser Steel Corporation to submit additional information prior to mine-plan approval or by OSM conditionally approving the mine plan with specific environmental protection permit stipulations.

The mine-plan application is available for public review at the following locations:

Office of Surface Mining
Western Technical Center
Brooks Towers, 2d Floor
1020 - 15th Street
Denver, Colorado 80202

State of Utah
Division of Oil, Gas, and Mining
State Office Building
Salt Lake City, Utah 84114

Recorder's Office
Emery County Courthouse
Castledale, Utah 84513

Should you have any questions on the public meeting or OSM's NEPA compliance activities, please contact Charles Albrecht at telephone number (303) 837-5656 or write to the OSM address shown above.

Sincerely,

Russell F Price

for Allen D. Klein
Administrator
Western Technical
Center

STATE OF UTAH
NATURAL RESOURCES & ENERGY
Oil, Gas & Mining

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Cleon B. Feight, Division Director

November 29, 1982

Mr. Joe T. Taylor
Vice-President, Coal Group
Kaiser Steel Corporation
Executive Offices, Kaiser Center
300 Lakeside Drive
Oakland, California 94604

RE: Apparent Completness Review
Kaiser Steel Corporation
South Lease Mine
ACT/015/008
Emery County, Utah

Dear Mr. Taylor:

Enclosed please find a copy of the Division's Apparent Completeness Review (ACR) for Kaiser Steel's South Lease Mine. The ACR, in an effort to expedite the review process, lists areas that are incomplete as well as addressing areas that will require additional information necessary to proceed with a Technical Analysis (TA). The Office of Surface Mining's (OSM) comments have been incorporated into the ACR, as have relevant concerns of other Federal and State agencies.

If you have any questions concerning the ACR, please contact me or Cy Young of my staff. We would be more than happy to arrange a meeting to discuss the ACR and further facilitiate the review process. Your earliest response would be greatly appreciated so we may establish a mutually acceptable timeframe for your resubmission.

Sincerely,

JAMES W. SMITH, JR.
COORDINATOR OF MINED
LAND DEVELOPMENT

JWS/CY:btb

cc: Allen Klein, OSM

Board/Charles R. Henderson, Chairman • John L. Bell • E. Steele McIntyre • Edward T. Beck
Robert R. Norman • Margaret R. Bird • Herm Olsen

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APPARENT COMPLETENESS REVIEW

Kaiser Steel Corporation
South Lease Mine
ACT/015/008, Emery County, Utah

UMC 771.23 General Requirements for Format and Contents

The applicant has assembled the application in a format consistent with the Division of Oil, Gas and Mining's (DOGM) permanent regulations, Section UMC 771 through UMC 786. The Minerals Management Service (MMS) has determined the application to be adequate with the following stipulations listed below to aid in the administration of their associated Federal coal leases during the five-year permit period.

Stipulation No. 1. If mining on Kaiser leases north and east of the permit area is contemplated from access within the permit area, conceptual plans for mining the north and/or east area must be submitted within 180 days of permit issuance to the MMS for their concurrence. Approval of mining in this area will be a separate action.

Stipulation No. 2. Modifications or changes to approved underground mine plans must be submitted to MMS for approval prior to any mining.

Stipulation No. 3. The company will involve MMS in all situations involving changes in the approved plan for recovery or abandonment of the coal resource. Normally, each problem will require a joint (management and MMS) site specific inspection and a joint review followed by a formal submittal of a plan for approval by the MMS.

Stipulation No. 4. Submit as a supplement to the mining plan the Roof Control and Ventilation System and Methane and Dust Control Plans, most recently approved by Mine Safety and Health Administration (MSHA), including the approved mine maps submitted as part of these plans. All such plans changed or modified and approved by MSHA will be submitted as addendums or modifications to the formal mining plan. Information submitted to the various agencies must be compatible.

Stipulation No. 5. Submit as a supplement or an addition to the narrative, plans for protecting existing oil, gas and water wells or any underground resources when encountered.

Bonding

The reclamation plan and cost estimate are contained in Vol. 2, Chapter III, pages 53-82. The statement made in 3.5.7.1(a), that "the salvage values of buildings and surface facilities is assumed to cover the costs for their dismantling and removal" is fallacious. The equipment to be used and its hourly cost, as shown in 3.5.7.1(c), cannot be assumed to be owned and

operated by Kaiser Steel at their use rates. The reclamation cost estimate for bonding must be recomputed assuming the mine will be abandoned or the permit withdrawn, the surface facilities have no value and require disposal, and all reclamation will be performed by contract under the State or Federal regulatory authority. The cost estimate should include computations for removal of surface facilities, closing of slope entries and shafts, removal of transportation alignments, and surface revegetation and monitoring.

UMC 771.27 Verification of Application

The application must contain a notarized verification that the application is true and correct, verified by a responsible official of the applicant, as per required in this section of the regulations.

UMC 782.13 Identification of Interests

Please supply the mailing address for the Henry J. Kaiser Family Foundation.

UMC 782.18 Personal Injury and Property Damage Insurance Information

The Certificate of Insurance included in the plan shows an expiration date of April 1, 1982. Evidence of renewal should be supplied by the applicant for review by the Division.

UMC 782.19 Identification of Other Licenses and Permits

As a condition of approval of the application, the applicant shall provide the Division with the required data concerning each license and permit applied for when such application is made. If at the time the Technical Analysis is completed, no such information has yet been received by the Division, this will become a stipulation for approval of the mine plan.

UMC 783.14 Geology Description

The plan does not sufficiently address the requirements of this section in terms of chemical analysis of the coal seam, the strata immediate overlying and underlying the coal seams to be mined, and the stratum disturbed by mining operations such as the rock slopes which are to be excavated from both above and below the Book Cliffs. The analysis should be presented in a format which shows the horizon or coal seam analyzed, the pyrite, marcasite and organic sulfur content, the percent heavy metals, percent sodium and any other elements which have potential for alkalinity or toxicity.

UMC 783.15 Ground Water Information

The applicant should supply more information on the quality and quantity of ground water present in the MPA. This could be accomplished by making comparisons with the existing conditions at the Sunnyside minesite and Geneva Mine. It is stated that "during later years of mining in the MPA, moderate

amounts of water may be expected in the northern and eastern portions of the MPA, especially along fault zones." A more accurate estimate of water quality and quantity in the MPA would be helpful in assessing the permit application. This can be accomplished by the following methodologies:

1. Estimate water quantity and quality based on information retrieved while mining the exploratory test entry from the Geneva Mine during years 1957 to 1962. Also, any water quality or quantity data available from nearby mines must be provided, if it can help predict the amount of water that will be encountered on the South Lease property.

2. An estimate of where the largest amounts of water will be encountered and where these points are located in terms of the overall mine sequence would be helpful to assess the point in time when water may have to be discharged from the mine. Monitoring will have to be discussed, in regards to, what water quality parameters will be sampled and what methods will be used to sample quantity.

3. The Division would also like to know the current status of the slug test and pump test for monitoring station WMH-3D. How was this monitoring station developed and was any sort of wellpoint or screen used? Can any water quality information be retrieved from this well? If the tests have been completed, the results of those test must be included together with a discussion of their bearing on the ground water system.

4. The Division would like more explicit information on the driller's observations that water inflow was from the fractures in the Sunnyside main seam. Does ground water occur only in the faults, or does it also occur in fractures (cleats) throughout the coal? Which aquifer supplies water to the springs? If water bearing faults are encountered, would draining them also drain aquifers overlying the coal? These questions must be discussed before impacts can be evaluated adequately. The fact that the fractures contain water indicates that recharge occurs. The applicant needs to discuss the source of the water in the fractures.

5. The possibility of subsidence needs to be discussed in terms of whether cracks would develop, draining aquifers above the coal, and would subsidence affect spring flow?

6. If ground water is encountered in great enough quantities and cannot be adequately stored underground, where will it be discharged and by what means will it be discharged?

7. Due to the dry site conditions and the erosive nature of the shale, what precautions will be taken to prevent excessive erosion caused by any long-term discharge of ground water? See UMC 817.47.

8. Apparently, an unknown quantity of water will be removed during mining. Will this affect any developed water supplies downgradient?

9. It should be noted that the semi-arid regions of the West do contain extensive, permanent aquifers (for example, the Ogalalla Formation of the High Plains, the Entrada sandstone in the Four Corners area). It was stated on page VII-4, 2nd paragraph, 1st sentence, no extensive permanent water tables or aquifers exist in the semi-arid regions of the West. This statement is incorrect and should be revised and deleted.

UMC 783.16 Reclamation Plan: Ponds, Impoundments, Banks, Dams & Embankments

Little Park Wash

The area of initial development and disturbance above the Book Cliffs is of some concern because of its location within the Little Park Wash. Plate III-5, Plan View Sedimentation Control Structures, is not of sufficient clarity to pinpoint the location of the structures in question. The construction of various structures (an interceptor ditch, a berm, a retention ditch with emergency spillway and a temporary coal stockpile) are located either within or in close vicinity to the Little Park Wash area.

In order to adequately justify building such structures within the Little Park Wash, the following information will need to be generated.

1. A more detailed discussion of the flood protection measures for all structures.

2. A channel cross-section for the wash in the immediate area of the structures in question and their location within the cross-section area.

3. More information regarding flood stages, high water marks within the area of the temporary coal stockpile.

4. Some sort of timeframe for the construction and removal of these temporary structures in relation to possible occurrence of major hydrologic storm events.

5. A brief discussion of alternate sites and the reasons why they were not chosen as more desirable locations.

6. A maintenance plan must also be determined for all sediment structures and the level of sediment permissible within each structure clearly marked.

Cove Area Below the Cliffs

Plate III-5, Plan View Sedimentation Control Structures, is not of sufficient clarity to ascertain the location of the structures in question. A correlation of fill ditches, interceptor ditches, retention ditches with emergency spillways and culverts by drainage area would help clarify the map and the calculations needed to justify their size and configuration. Supporting calculations are left out of the narrative for all hydrologic structures and this information must be submitted by the applicant. Some explanation of why retention ditches where chosen as sediment structures and their applicability to the overall plan is also necessary.

It is recommended that a better description and narrative also be supplied in regards to the Rotary Breaker Disposal Area. Since it fills in a wash area, drainage in and around this area needs to be addressed. The plans show a fill ditch but no culverts or any other hydrologic structures to route water around or under the disposal area.

A maintenance plan for all sediment structures should be presented, as well as maximum sediment storage levels for all sediment structures and a means of ascertaining these levels in the field, pursuant to UMC 817.42(2).

UMC 783.17 Alternative Water Supply

Alternative water sources as described on page VII-34 must be discussed, including quantities of water involved, exact location, how water would be brought to the minesite, why the sources would be used, etc.

UMC 783.19 Vegetation Information

When using the baseline method for vegetation sampling, it should be shown that the year of sampling was a "normal precipitation year." Vegetation sampling sites should be numbered and the numbered locations plotted on vegetation maps 1X-2 and 1X-3.

UMC 783.22 Land-use Information

The mine plan must provide productivity rates for areas affected by the surface operations as required by (a)(2)(ii) of this section. The operator can obtain this information from the Soil Conservation Service.

UMC 783.25 Cross Sections, Maps and Plans

(k)(1), (3) Operator must submit sufficient slope measurements to adequately represent the existing land surface configuration. Cross-sections through the land surface are helpful in depicting slopes.

(1) Maps and cross sections must be certified by a registered professional engineer or professional geologist.

UMC 784.11 Operation Plan: General Requirements

(b)(1-6) Kaiser Steel proposed to construct several facilities and structures after the five-year permit term that will be used during life-of-mine operations. These proposed future surface structures include:

1. Rail loop and permanent unit train loadout (completed year six).
2. Waterlines (completed year seven).
3. Preparation plant (no timeframe given).
4. 40,000 ton stockpile with reclaim tunnel (no timeframe given).
5. Refuse pile (no timeframe given).
6. Sampling building (completed year seven).
7. 36 inch conveyor belt (completed year six).
8. Ventilation shafts (started year six, completed year seven).

There is litle or no useful information regarding these structures. To reach a decision in compliance with NEPA on approval of the "life-of-mine," OSM must consider all of the impacts associated with these facilities. Without this information, the Federal decision maker would be incrementally considering the permit and not the entire proposed project. A sedimentation and erosion control plan must be submitted for the transportation facilities, preparation plant, coal stockpile, refuse pile, and conveyor system. Plate III-5, in its present form, cannot be used to verify adequacy of sedimentation control. A stability analysis pursuant to UMC 817.72 through 817.86 should be developed for the proposed refuse pile.

(b)(3) The applicant has not adequately addressed the sequence of mining in the first three years of development. One of the main concerns of the Division is the temporary stockpiling of coal in Little Park Wash. The applicant should provide more detail, concerning the timing involved in constructing the 12 percent slopes and why such construction cannot be more closely coordinated with mining from Little Park Wash, thus decreasing the time involved in stockpiling. The applicant should also address the measures to be taken to protect the upper mine facilities, especially the coal stockpile, from flash flooding and what measures will be taken to protect the environment from degradation caused by such flash flooding.

(b)(4) The MRP should address the disposal of coarse refuse and overburden extracted from the manshaft which is to be constructed in Little Park Wash as per required by this section.

(b)(6) Before construction of a public water supply system, complete plans and specifications must be approved by the Department of Health. The plans and specifications must show sufficient detail to determine their compliance with the Utah Public Drinking Water Regulations. When water is being hauled to the mined site the methods used must be as outlined in the Department of Health's "Recommended Procedures for Hauling Culinary Water." The water can only be obtained from a water system rated "approved" by the Department of Health.

UMC 784.13 Reclamation Plan: General Requirements

(a)(3) Operator must submit cross-sections showing the final surface configuration of the permit area following conclusion of mining.

(b)(4) The applicant must submit plans for removal and storage and redistribution of topsoil from the area proposed for the storage of 40,000 tons of coal in Little Park Wash.

(b)(4)(vii) The applicant must sumbit plans for the soil sampling procedure that will be used at the time of reclamation for the evaluation of the stored topsoil and subsoil nutrient requirements.

(b)(7) Are any wastes toxic- or acid-forming? If so, the operator must submit plans to insure all debris, acid-forming and toxic-forming materials, and materials constituting a fire hazard are disposed of in accordance with UMC 817.89 and 817.103 and a description of contigency plans to preclude sustained combustion of such materials.

If nontoxic, the operator must show sufficient evidence of this.

(b)(8) Operator must supply maps and/or cross-sections of measures to be used to seal mine openings.

Operator must submit letter of authorization to use Sunnyside-East Carbon landfill dump for noncoal waste disposal.

UMC 784.14 Reclamation Plan: Protection of Hydrologic Balance

The use of water from springs must be discussed. This discussion should include what the water is used for, whether or not water rights have been granted for the springs, what improvements have been made to the spring, number of cattle or sheep watered (if that is the use of the spring) and the flow from springs. See UMc 784.14(a)(2).

UMC 784.18 Relocation or Use of Public Roads

Does operator have any plans to upgrade BLM Horse Canyon Road? If so, does this comply with BLM policies?

UMC 784.19 Underground Development Waste

What will be done with development waste rock from mining through faults, etc.?

Operator states that a sediment pond will catch runoff from the breaker waste disposal pile (Section 3.4.9.1), but fails to delineate on the sediment control structures map. Please submit this design and location.

(b)(1)-(5) Each application must contain a geotechnical analysis of the proposed waste disposal site as required by 784.19(b) numbers one through five.

UMC 784.20 Subsidence Control

The application shall include a survey which shall show whether structures or renewable resource lands exist within the proposed permit and adjacent areas and whether subsidence, if it occurred, could cause material damage or diminution of reasonably foreseeable use of such structures or renewable resource lands. Such renewable resource lands are defined as aquifers and areas for the recharge of aquifers and other underground waters, areas for agricultural or silvicultural production of food and fiber, and grazing lands.

(a)(2) The plan should include the extent to which controlled subsidence is expected and its method of calculation, the areas of the mine for which subsidence is expected and the projected maximum surface affect based on overburden depth and depth of coal extraction.

(b) The detailed description of the measures to be taken to prevent subsidence should include the calculations of pillar strengths and safety factors where pillars or barriers are not to be removed.

(c) The plan does not include a detailed description of measures to be taken to litigate the effects of any material damage as required by this section. This should be submitted for the Division's review.

(d) The plan should include the measures to be taken to determine the degree of material damage caused by subsidence.

UMC 784.23 Operation Plan: Maps and Plans

(b)(5) The applicant must provide cross-section maps of topsoil and subsoil storage piles.

The applicant must provide surface maps with the location of the soil sampling sites.

(b)(13) Operator must submit location of each structure (buildings, sediment ponds, roads, etc.) that will remain on property after completion of underground mining activities.

Maps, plans and cross-sections for waste facilities may only be prepared by a qualified registered professional engineer. This can be shown either by a statement of certification or a seal on each document.

UMC 784.24 Transportation Facilities

Operator states in Section 3.2.10 that the BLM road at the top of the Book Cliffs will be extended to the coal raise. It is assumed from field investigation that this means Williams Wash. Please verify this and submit any plans for upgrading of this Wash.

Operator must submit a schedule of use for Wash, i.e., frequency of use, type of vehicles, etc.

Operator must submit cross-sections and profiles of upper and lower portal and access roads around surface facilities.

Please submit maintenance plans for roads.

To assess potential impacts on the transportation network, the following information is required:

1. Location of the existing rail loadout facility where coal will be stockpiled and shipped.

2. Average number per day and type of trucks used to convey coal to the off-site loadout facility.

UMC 784.25 Return of Coal Processing Waste to Abandoned Underground Workings

It is assumed that the operator has no plans to return coal processing wastes to abandoned underground workings. Please verify.

UMC 784.26 Air Pollution Control Plan

During Phase I and Phase II when the haul road will be graveled, the operator must provide watering as well as chemical stabilizer for dust control. Please submit plans for this.

Is any watering going to be used to control fugitive dust from refuse piles and vehicular traffic around surface facilities?

Operator must submit letter of approval by Bureau of Air Quality for air pollution control plans.

TECHNICAL DEFICIENCIES

UMC 817.11 Signs and Markers

Section 3.3.5.1 of the mine plan does not provide sufficient detail of types of signs to be used, their maintenance nor their replacement. The applicant should address this section in more detail so the Division can review it for technical adequacy.

UMC 817.13-.15 Casing and Sealing

The applicant must show that proper casing and sealing, in accordance with UMC 817.13, is planned or has been accomplished for all exploratory bore holes within the permit area. Data submitted should include borehole locations, depth and type of casing or sealing.

UMC 817.23 Topsoil Storage

The applicant must submit plans for storage of topsoil and subsoil that include the revegetation and erosion control measures that will be used for protection of the storage piles.

UMC 817.59 Coal Recovery

Information should be supplied concerning the estimated coal reserves of the Sunnyside Seam(s) or split and why this is the only mineable seam. Please include why the split seam is not being mined and how the recovery percentages of 36 and 69 were derived.

UMC 817.71-.74 Disposal of Underground Development Waste and Excess Spoil

Please submit narrative to accompany cross-sections of waste pile to comply with UMC 817.71-.74.

UMC 817.81-.88 Coal Processing Waste Banks

The MRP does not include sufficient information on the proposed rotary breaker waste pile. Page XII-10, which addressed the stability of earthen structures, i.e., the rotary breaker pile, only notes that applicable sections of the Utah program will be followed.

According to the definition of coal processing waste, the rotary breaker pile would qualify as a processing waste pile. As such, Sections 817.71 through 817.86 of the approved Utah program must be complied with. The application contains no information as to how this will be done.

At a minimum, the application must contain information that demonstrates, using hydrologic, geologic, geotechnical, physical and chemical analyses, that disposal of the rotary breaker waste does not:

1. Adversely affect water quality, water flow or vegetation;

2. Create public health hazards; or

3. Cause instability in the disposal area.

The applicant must demonstrate through appropriate geotechnical investigation, materials strength testing and stability analysis that the rotary breaker pile has a minimum static factor of safety of 1.5 The applicant must provide an inspection schedule that demonstrates that the rotary breaker pile will be inspected at least quarterly by a registered engineer. Specifications must be provided as to how the applicant proposes to compact the rotary breaker material to achieve a compaction of 90 percent of the maximum dry density. The final waste pile must be covered with four feet of the best available nontoxic and noncombustible material. Information must be provided that demonstrates that the material used for the underdrains meets the requirements of UMC 817.72(b)(3) of the Utah program. Calculations must be provided that demonstrate that the diversion channels around the fill will pass, at a minimum, the 100-year, 24-hour precipitation event.

Until the information delineated above is provided, compliance with the approved Utah program with regard to coal processing waste disposal cannot be demonstrated and, therefore, approval could not be granted.

UMC 817.97 Protection of Fish, Wildlife and Related Environmental Values

According to the Utah Division of Wildlife Resources (DWR), the deer herd data presented on pages X-12 through X-15 and in Table X-2 that relate to Units 27a and 19 are irrelevant to the project. The data have been poorly analyzed and incorrectly compared to Unit 27b. These data should either be deleted or an appropriate analysis and comparison using the numerous data available from DWR should be made.

The MRP should provide some relative estimate of the acreage of critical deer winter range that may be lost due to intolerance of the proposed surface facilities and operation. DWR estimates that in addition to the 29 acres physically destroyed, another 279 acres of critical winter range may possibly become unacceptable to mule deer. Mitigation measures to offset such a loss should be proposed and approved before disturbance begins. The complete and final study proposal for evaluating deer use of Little Park Wash area should be included in the mine plan.

Because the prairie dog town is important for golden eagle hunting grounds and burrowing owl nesting areas, the applicant must include additional discussion as to why the road and railroad access must dissect the prairie dog town. If there are no alternative routes, then the applicant must discuss impacts of the road and railroad access and possible measures to be used to mitigate impacts.

Final study proposals for burrowing owls and black-footed ferrets and results of these studies should be included in the MRP. If results indicate that impacts may occur to either species, suitable mitigation measures will have to be proposed and found acceptable before construction begins.

Applicant must obtain clearance from the USFWS for destruction of burrowing owl nests or for moving birds prior to any disturbance.

Discuss mitigation measures to be used to protect or develop springs and other watering areas if subsidence occurs.

One stock tank identified on Plate X-1 lies on or near a proposed road. In the event this tank is damaged or lost, a replacement would be required.

Wildlife habitat could be enhanced by providing line trickle guzzlers off of the proposed waterline. Such facilities could greatly enhance habitat for chukar and antelope.

Applicant should discuss impacts to wildlife of conveyor systems, powerlines and other overland transportation systems and fences to be constructed over the life of the mine. Include information on big game migration routes and movements and measures to be used to lessen impacts. All fences used to preclude wildife use should be designed so that big game will not attempt to pass and become entangled. Specification for their design should be submitted.

The applicant should explain, in detail, the rationale behind the proposed monitoring studies. Examples of information needed are:

1. When will monitoring studies start? If studies are to start after disturbance occurs, they cannot be used as a data base, as suggested in the MRP.

2. Migration corridors for large mammals need to be identified prior to disturbance. If construction of the conveyor system has already started, the migration pattern, if any exists, could already be affected.

Wildlife monitoring studies described in the MRP cannot establish a quantitative data base if disturbances are occurring prior to starting the studies.

A golden eagle nest site is located in T. 16 S., R. 14 E., Sec. 36: SW1/4 SW1/4. Eagle activity or young were not observed at the nest site on June 4, 1982; however, the nest appeared to be in good repair and mute was evident. Wildlife monitoring studies should assess nesting activity because of proposed locations for the mine portal pad, water storage tanks and coal stockpiles

within 0.5 miles of this nest which is the standard buffer zone within which permanent facilities are not allowed. Mitigation of impacts to the nest site will be required of Kaiser in consultation with the Fish and Wildlife Service and the BLM and may include relocation of proposed facilities.

Discuss in more detail the possible effects to vegetation and wildlife due to the use of William's Wash as an access road to the upper facilities. Indicate expected use including numbers and types of vehicles using the wash, a timetable of use and schedule of road maintenance. Describe measures to be used to lessen impacts.

UMC 817.99 Slides and Other Damage

A commitment should be made to immediately notify the Division at any time a slide occurs which may have a potential adverse effect on public, property, health, safety, or the environment and to comply with any remedial measures required by the Division.

UMC 817.101-.106 Backfilling and Grading

Please provide more specific plans for backfilling and grading such as covering debris (i.e., coal processing waste pile), compaction of backfilled material for stability, etc. In order to fulfill the requirements of these sections and UMC 784.13(b)(3), the application must contain a specific descriptive plan for backfilling, soil stabilization, compaction and grading, with contour maps or cross-sections that show the anticipated final surface configuration of the proposed permit area.

UMC 817.111-.117 Revegetation

In addition to areas at a minesite which are permanently reclaimed, there are usually two types of areas which must be temporarily reclaimed. These are short-term, temporary (i.e., less than three to five years) and long-term, temporary (i.e., life of mine) areas. Shrubs/trees need not be included in the short-term seed mixture. All areas to be temporarily reclaimed should be addressed in this light. If changes in the proposed permanent seed mixtures are desired by the applicant, they should be submitted to the Division for approval.

The sites adjacent to surface facilities which are seeded for life of the mine (page 3-45) should be monitored in order to evaluate the suitability of the seed mixtures proposed and to help demonstrate that revegetation can be feasibly accomplished under the plan proposed. It is recommended that monitoring be conducted at least once during the growing season, preferably July or August, for the first five years following reseeding and every three to five years thereafter. Monitoring should be conducted during approximately the same time from year to year.

For the below-the-cliffs sediment control structures, a broadcast seeding rate of 52.0 lbs PLS/acre is proposed. Is this value correct? If so, the rate seems extremely heavy and may result in wasted seed and additional expense to the operator.

UMC 817.163 Roads

(c)(1)(d)(9) Please submit safety factors for cut slopes and embankments in haul/access roads.

(c)(1)(i) Please provide calculations necessary for culvert sizing in roads to meet appropriate precipitation event.

Socioeconomics

Kaiser Steel is preparing a socioeconomic impact assessment. OSM, State and local officials are participating in the review of this work. OSM will evaluate the assessment findings, including proposed mitigation measures, in the environmental document.

Cultural

The cultural resource submission is essentially complete. For OSM to complete its compliance interactions with the Utah SHPO, they require a copy of the site forms. Upon receipt of these OSM will write the SHPO in regard to site eligibility and an "effect" determination will be sought.

Summary

In summary, the Division has bowed to the decisions of Judge Flannery, remanding for revision many areas of the regulatory requirements. The Board of Oil, Gas and Mining has suspended corresponding State regulations pertaining to these decisions. The Division has reviewed fish and wildlife, soils and standards for revegetation success information pertinent to the South Lease Mine Plan and identified deficiencies which, under revised regulations to be promulgated, may be upheld as deficiencies. The Division, in view of this predicament, has incorporated above what is needed for assessing the reclamation and operation plans to meet the performance standards in light of those areas which are in flux.

File ACT/015/008

RECEIVED
NOV 26 1982
DIVISION OF
OIL, GAS & MINING

U.S. FISH AND WILDLIFE SERVICE
1311 FEDERAL BUILDING
125 SOUTH STATE STREET
SALT LAKE CITY, UTAH 84138

November 23, 1982

DON
Steve
JIM

DEC 02 1982

MEMORANDUM

TO: Acting Deputy Administrator, Office of Surface Mining
Denver, Colorado

FROM: ACTING Field Supervisor, Ecological Services
Fish and Wildlife Service
Salt Lake City, Utah

SUBJECT: Kaiser South Lease Mine Plan Review for Completeness

We have completed our review of the draft mine plan for the Kaiser South Lease and feel certain questions require further clarification. In general, we felt the mine plan was clear and concise and being developed in an orderly manner.

We feel that the Company should address more effort in mitigation of impacts to wildlife and explore the potential for enhancement of wildlife habitat. Some suggested areas to be considered are enhancement of chukar habitat through water development, reallocation of forage on critical big game range, and enhancement of borrowing owl nesting opportunities. We would be happy to discuss these further if you desire.

In regard to the Little Park development, further discussion seems warranted before impacts can be evaluated. We still are unsure there are adequate benefits to the Company to justify the Little Park development. Our specific comments on the proposed development are:

- What is the anticipated average daily travel to be expected on the Little Park access between miners, water trucks, equipment, etc?

- What types and periodicity of noise disturbances will occur.

- How much waste rock will be created by the Little Park development and what will be done with waste rock.

- What magnitude of ongoing operations will be maintained at the Little Park Site after completion of the man and material entrance from the Book Cliffs face and what is the schedule for reclamation at this site. It is difficult to identify the magnitude of the disturbances planned for Little Park and how significant these will be for the life of the mine as presented in the plan. How many acres will remain impacted at Little Park for the life of mine?

- In comparing plates III-1, III-10 and the narrative, it is difficult to determine the magnitude of the impacts that will occur from new road construction in the Little Park area. We would be especially concerned where new road construction occurs in riparian areas.

Some of our comments reflect a collection of new data since the completion of this draft mine plan. The mine plan has not addressed the golden eagle nest located by the Bureau of Land Management (BLM) during the 1982 field season. Additionally, the data is inaccurate relative to nest locations for golden eagles located by FWS in 1981. Figure 1 shows these nest locations and 1 km radius buffer zones. We have not field checked any of these nests to determine what areas would be included in a site specific buffer zone. It appears that the water storage area would be approximately 1,300 feet and the mine portal approximately 2,100 feet from the nest site located by the BLM in 1982. Much of the coal loadout facilities at the base of the Book Cliffs lie within 1 km of the nest. We need to conduct a field examination with the BLM to develop joint recommendations for a site specific buffer zone for this nest. It should be anticipated that the results could affect both the proposed timing of development and areas proposed for development.

We suggest that the design of fences be suitable for big game passage or that the situation be closely watched for the need for escape mechanisms. The design of fences and fence locations or proposed monitoring plan should be included in this plan.

The presumption has been made at 3.5.5 and elsewhere that the management for prairie dogs will provide habitat for burrowing owls. In light of the 1982 prairie dog inventory by the Company, we believe a more positive mitigation plan should be implemented for burrowing owls. Futhermore, we would remind you that plans to move burrowing owls from nests will require permits obtained through the Fish and Wildlife Service (FWS) and that the FWS will likely require that a FWS raptor specialist participate in any such moves. We suggest development of a plan to enhance areas not currently fully utilized by burrowing owls away from the proposed right-of-way. Data collected by the Company indicates conflicts between burrowing owls and the location of the proposed right-of-way will need to be resolved. Figure 2 shows the location of nests and suspected nests, 1981-82, in relationship to the proposed road. We are also concerned that proposed mitigation measures, such as reversing the location of the access road and railroad, have not been incorporated.

Impacts and mitigation for chukars have not been addressed. Revegetation with the goal of improving range conditions may, in some instances, conflict with the chukar's dietary needs.

What mitigation has been proposed to protect surface water sources? If these sources are lost what measures will be taken by the Company to replace them? For how long will the Company be responsible for maintaining them?

The Company has a 400 foot right-of-way in the vicinity of the prairie dog colony. What measures will be utilized to minimize surface disturbance in this vicinity, or will the entire 400 feet be bladed or otherwise disturbed?

Before commenting on the adequacy of the section covering the black-footed ferret, the FWS needs to be assessed as precisely as possible what has occurred to the prairie dog colony. Additionally, new methodologies may emerge from recent work in Wyoming that are more effective in identifying ferret habitat.

Additional concerns we wish to mention but not elaborate upon at this time are the magnitude of subsidences up to 6.5 feet, and reclaimability of some of these sites. Are there options for storing rock fill from the rotary breaker in the underground workings of the mine? Substantial savings in disturbed acreages and resulting reclamation costs and problems may be saved if underground storage is possible.

Blaine D. Johnson

cc: DWR, SLC
DWR, Price
OGM, SLC

November 19, 1982

Memo to Coal File:

RE: Kaiser Steel Corporation
South Lease Mine
ACT/015/008
Emery County, Utah

On the evening of November 3, 1982 Ev Hooper and Cy Young attended a hearing in Price, the purpose of which was to determine if further environmental analysis was needed on the South Lease Mine property. After testimony was given by several parties the hearing was adjourned for OSM to consider the need for a more in depth analysis.

On the morning of November 4, 1982 Doug Pierce of Kaiser Steel conducted a tour of the South Lease property for concerned county and state representatives. This was attended by Ev Hooper and Cy Young. Due to time constraints only the Little Park Wash site was visited.

On the afternoon of November 4, 1982 a socio-economic impact meeting was held at the Southeastern Utah Association of Governments offices in Price, Utah. Cy Young and Ev Hooper attended this meeting at which Roger Weaver presented his findings, and comments on any defeciencies were presented by concerned county and state representatives.

Cy Young

CY YOUNG
ENGINEERING GEOLOGIST

Statistics:
Vehicle EX #885, 225 miles
Per Diem: 2 people X 2 days = $110.18

United States Department of the Interior
OFFICE OF SURFACE MINING
Reclamation and Enforcement
BROOKS TOWERS
1020 15TH STREET
DENVER, COLORADO 80202

~~to file~~ File
ACT/015/008

JIM

NOV 09 1982

November 1, 1982

Mr. James Smith
Coordinator of Mined Land Development
Utah Division of Oil, Gas and Mining
4241 State Office Building
Salt Lake City, Utah 84114

Dear Mr. Smith:

The Office of Surface Mining has reviewed for completeness the Kaiser Steel South Lease Mine permit application. Comments from the staff are provided in Attachment A.

Also provided for your review are comments on the MRP from Minerals Management Service, (Attachment B) and BLM's Moab District Office, (Attachment C). We expect to receive comments from the Fish and Wildlife Service within the next two weeks.

If you have any questions or concerns, please contact Floyd Johnson at (303) 837-5656.

Sincerely,

Allen D. Klein

Allen D. Klein
Administrator
Western Technical Center

Attachments

RECEIVED
NOV 08 1982
DIVISION OF
OIL, GAS & MINING

ATTACHMENT A
Kaiser Steel Corporation
South Lease Mine
Completeness Review

Cultural Resources:

The cultural resource submission is essentially complete. Further inventory may be required in the sample survey areas if subsidence becomes a problem in the future. For OSM to complete our compliance interactions with the Utah SHPO, however, we require a copy of the site forms. The site forms will also supplement the information contained in the mine plan. Upon receipt of the site forms OSM will write the SHPO in regard to site eligibility and an "effect" determination will be sought.

Hydrology:

A. General

The sections on hydrology are not adequate. They do not include sufficient details and analyses to justify the applicant's assertion that impacts to the water resources would be minimal.

1. If little or no site-specific data are available, the applicant should use data from U.S. Steel's adjacent mine as well as from Kaiser Steel's Sunnyside mine. These mines should have records of the amounts of ground water encountered during mining, both in undisturbed coal and in the faults, and of the quality of this water. This data should be included in the permit application as an indication of what would be encountered at South Lease.

2. The possibility of subsidence occurring under Little Wash Draw and impacting any aquifers overlying the coal or affect flow in the draw and its tributaries must be discussed.

3. Any cumulative impacts on the hydrologic balance that might occur as a result of operations at the seven mines that extend through the area must be discussed.

B. Specific Comments

1. Page III-29, 3rd paragraph, 3rd sentence:

The alternate water sources need to be discussed as to location, amount available, reasons for using or not using them.

2. 4th sentence:

   Why, specifically, would a treatment plant be necessary? What kind(s) of treatment would it provide?

3. Page VII-4, 2nd paragraph, 1st sentence:

   This statement is incorrect and should be revised or deleted. The semi-arid regions of the West do contain extensive, permanent aquifers (for example, the Ogalalla Formation of the High Plains, the Entrada Sandstone in the Four Corners area).

4. 3rd paragraph:

   The applicant should use records from nearby mines to estimate the amount of water that would be encountered.

5. Page VII-5, 4th paragraph, 1st sentence:

   See comment 3.

6. 4th sentence:

   This statement must be revised. The fact that the fractures contain water indicates that recharge occurs. The applicant needs to discuss the source(s) of the water in the fractures.

7. Page VII-10, 1st paragraph, 1st sentence:

   The applicant states that a slug test and a pumping test would be made on well S-32. The results of those tests must be included together with a discussion of their bearing on the ground water system.

8. Page VII-11, section (d):

   The use of water from the springs must be discussed. This discussion should include what the water is used for, whether or not water rights have been granted for the springs, what improvements have been made to the springs, number of cattle or sheep watered (if that is the use of the spring), and the flow from springs.

9. Page VII-12, 1st paragraph, 1st two sentences:

   Water quality data for the springs and any water quality data available from nearby mines must be provided.

10. Page VII-13, 2nd paragraph, 1st and 3rd sentences:

    Data on amounts of water encountered at nearby mines should be given as an indication of what might be encountered in the South lease.

11. Page VII-14, section (b):

    The statement is made that water encountered in the mine will be monitored if sufficient water is encountered to merit such monitoring. The criteria for determining if "sufficient water is encountered," as well as details as to how the monitoring will be done, must be submitted for approval by the regulatory agency.

12. It is not clear which units are water-bearing. Does ground water occur only in the faults, or does it also occur in fractures (cleats) throughout the coal? Which aquifer supplies water to the springs? If water-bearing faults are encountered, would draining them also drain aquifers overlying the coal? These questions must be discussed before impacts can be evaluated adequately.

13. The possibility of subsidence needs to be discussed in terms of whether cracks would develop, draining aquifers above the coal, and would subsidence affect springflow.

14. Apparently an unknown quantity of water will be removed during mining. Will this affect any developed water supplies downgradient?

15. Page VII-15, 6th paragraph:

    All disturbed areas must be protected by diversions, and runoff from the disturbed areas must be routed to sedimentation ponds. This must be discussed.

16. Page VII-34, Alternate water sources:

    These sources must be discussed, including quantities of water involved, exact location, how water would be brought to the minesite, why the sources would be used, etc.

17. Sediment control:

    Plate III-5 is very difficult to read. Because of this difficulty and the lack of specific data, it cannot be verified that runoff from undisturbed areas would be diverted around disturbed area, and that runoff from disturbed areas would be retained until any sediment settles out. The applicant must provide a legible copy of plate III-5.

18. Plate VII-6, sheet 1, shows details for retention ditches "A," "B," "C," and "D", but there is no indication where these ditches would be located. Include the locations of these ditches in the tables on plate VII-6.

19. VII-37, 2nd paragraph, 3rd sentence:

    Some of the cross sections on plate VI-12 show considerable amounts of alluvium along Little Park Wash, contradicting this sentence. See comments on alluvial valley floors on next page.

Geology/Coal Resources:

In general the discussion on geology is adequate; however, the following points need to be addressed:

1. Information must be given on coal reserves of the Sunnyside Seam(s) or split.

2. Analytical data must be provided on acid-forming or toxic-forming materials in the strata adjacent to the coal seam(s).

3. A discussion of why the Sunnyside Seam is the only mineable seam present must be provided.

4. Coal recovery and coal conservation must be further addressed, including: Why isn't the split-seam being mined? How were the coal recovery percentages of 36 and 69 derived?

Alluvial Valley Floors (AVF):

Additional information must be submitted in support of the request for a negative AVF finding. The permit application (Pg. VII-37) states that Little Park Wash occupies a narrow strike valley and has no associated flood plain or stream alluvium. It is also stated that the area is subject to sheet wash deposition and should be considered as an upland area.

This information is inconsistent with plate VI-1 (Geologic map-MPA). The geologic map shows relatively large areas (greater than 50 feet in width and greater than 10 acres in size) underlain by stream alluvium. The cross sections on plate VI-12 show more than 50 feet of alluvium. The information presented on these plates suggests that areas meeting the geomorphic criteria for AVF designation may exist in the mine plan area.

Additional information in the form of a map (1:24,000 scale is satisfactory) should be submitted which identifies the surface extent of the flood plains and any terraces underlain by unconsolidated material. The applicant should refer to Part I of the AVF guidelines of June 11, 1980 for additional guidance information that must be provided.

If areas meeting the geomorphic criteria for AVF designation are identified, water availability information should be submitted.

Soils:

Some of the soils have a very high Sodium-Adsorption-Ratio (SAR) close to the surface, especially in the rail spur area. (CFC2 - Chipeta C1 horizon 1-4 inches SAR 16.3; and PEC2 - Persayo A1 horizon 0-5", SAR 29.2 and C1 horizon 5-10 inches, SAR 40.3). Unless very salt tolerant vegetation is desired, the utility of stockpiling any of this material is questionable. This high SAR must be discussed. If soils with a high SAR are stockpiled, methods to reduce the SAR during reclamation must be described.

In addition, the following points need clarification:

1. The plan must discuss removal of vegetation before topsoil removal, including a description of the vegetative communities involved.

2. The company proposes to replace the loamy Mancos Shale material without any addition of topsoil. A discussion must be included of special measures to be taken to enhance plant growth, such as mulching, building settling basins for water retention, and fertilizing, to prevent erosion problems.

Subsidence Control Measures:

The surface area encompassed by this initial permit application contains the upper reaches of Little Park Wash and its tributaries. The applicant states that this stream is to be protected by barrier pillars (sections 3.3.2.2, 3.4.8.2, and 12.2). Section 12.4.4 states that monitoring of Little Park Wash will be accomplished by establishing a subsidence detector grid. The regulations (284.20(b) require that the application contain a detailed description of the measures to be taken to prevent subsidence from causing material damage. Therefore, the following detailed descriptions need to be included in the application:

1. Specific information and drawings to permit evaluation of the proposed monitoring program.

2. Barrier design details for the protection of Little Park Wash.

AOC, Backfilling & Grading:

Although the applicant states in Section 3.5 that grading shall be in accordance with UMC 817.101 through 817.105 and that a partial variance from 817.106 was needed, plans for accomplishing these requirements were not included. The application contained only generalities concerning backfilling and grading.

To fulfill the requirements of 784.13(b)(3) and 817.101-817.106, the application must contain a specific descriptive plan for backfilling, soil stabilization, compaction, and grading, with contour maps or cross sections that show the anticipated final surface configuration of the proposed permit area. These requirements must be met even though the life of the mine is to be 40 years.

Coal Processing Waste

The MRP does not include sufficient information on the proposed rotary breaker waste pile. Page XII-10, which addresses the stability of earthen structures, i.e., the rotary breaker pile, only notes that applicable sections of the Utah program will be followed.

According to the definition of coal processing waste, the rotary breaker pile would qualify as a processing waste pile. As such, sections 817.71 through 817.86 of the approved Utah program must be complied with. The application contains no information as to how this will be done.

At a minimum, the application must contain information that demonstrates, using hydrologic, geologic, geotechnical, physical and chemical analyses, that disposal of the rotary breaker waste does not-

1. Adversely affect water quality, water flow, or vegetation;
2. Create public health hazards; or
3. Cause instability in the disposal area.

The applicant must demonstrate through appropriate geotechnical investigation, materials strength testing, and stability analysis that the rotary breaker pile has a minimum static factor of safety of 1.5. The applicant must provide an inspection schedule that demonstrates that the rotary breaker pile will be inspected at least quarterly by a registered engineer. Specifications must be provided as to how the applicant proposes to compact the rotary breaker material to achieve a compaction of 90 percent of the maximum dry density. The final waste pile must be covered with 4 ft. of the best available non-toxic and non-combustible material. Information must be provided that demonstrates that the material used for the underdrains meets the requirements of 817.72 (b)(3) of the Utah program. Calculations must be provided that demonstrate that the diversion channels around the fill will pass, at a minimum, the 100-year, 24-hr. precipitation event.

Until the information delineated above is provided, compliance with the approved Utah program with regard to coal processing waste disposal cannot be demonstrated and, therefore, approval could be not be granted.

Bonding

The reclamation plan and cost estimate are contained in Vol. 2, Chapter III, pages 53 to 82. The statement made in 3.5.7.1(a), that "the salvage value of buildings and surface facilities is assumed to cover the costs for their dismantling and removal" is fallacious. The equipment to be used and its hourly cost, as shown in 3.5.7.1(c), cannot be assumed to be owned and operated by Kaiser Steel at their use rates. The reclamation cost estimate for bonding must be recomputed assuming the mine will be abandoned or the permit withdrawn, the surface facilities have no value and require disposal, and all reclamation will be performed by contract under the State or Federal regulatory authority. The cost estimate should include computations for removal of surface facilities, closing of slope entries and shafts, removal of transportation alignments, and surface revegetation and monitoring.

Transportation

The transportation facilities, including the railroad spur and access/haul road appear to be properly designed; however, there is no indication that the structures and grades were designed by a professional engineer as required by statute. The design documents must be resubmitted with seal of a registered professional engineer on each document.

To assess potential impacts on the transportation network, the following information is required:

1. Location of existing rail loadout facility where coal will be stockpiled and shipped.

2. Average number per day and type of trucks used to convey coal to the off-site loadout facility.

Socioeconomics:

Kaiser Steel is preparing a socioeconomic impact assessment. OSM, State, and local officials are participating in the review of this work. OSM will evaluate the assessment findings, including proposed mitigation measures, in the environmental document.

Wildlife Resources

1. Applicant must obtain clearance from U.S. Fish and Wildlife Service (USFWS) for possible destruction of burrowing owl nests (Migratory Bird Treaty Act) prior to disturbance.

2. If subsidence is predicted, the applicant must discuss mitigation measures to be used to protect or develop springs and other watering areas.

3. Applicant must discuss impacts of conveyor systems and possible mitigation measures to protect movement of large mammals.

4. Because the prairie dog town is important for golden eagle hunting grounds and burrowing owl nesting areas, the applicant must include additional discussion as to why the road and railroad access must dissect the prairie dog town. If there is no alternate route, then the applicant must discuss impacts of the road and railroad access and possible measures to be used to mitigate impacts.

5. The applicant needs to explain, in detail, the rationale behind the proposed monitoring studies. Examples of information needed are:

   a) When will monitoring studies start? If studies are to start after disturbances occur, they cannot be used as a data base, as suggested in the MRP.

   b) Migration corridors for large mammals need to be identified prior to disturbance. If construction of the conveyor system has already started, the migration pattern, if any exists, could already be affected.

In conclusion, the wildlife monitoring studies described in the MRP cannot establish a quantitative data base if disturbances are occuring prior to starting the studies."Life-of-Mine" Issues to be addressed:

"Life-of-Mine" Issues to be addressed:

Kaiser Steel proposes to construct several facilities and structures after the 5-year permit term that will be used during life-of-mine operations. These proposed future surface structures include:

- Rail loop and permanent unit train loadout (completed year 6)
- Waterlines (completed year 7)
- Preparation plant (no time frame given)
- 40,000 ton stockpile with reclaim tunnel (no time frame given)
- Refuse pile (no time frame given)
- Sampling building (completed year 7)
- 36" conveyor belt (completed year 6)
- Ventilation shafts (started year 6, completed year 7)

There is little or no useful information regarding these structures. To reach a decision in compliance with NEPA on approval of the "life-of-mine", OSM must consider all of the impacts associated with these facilities. Without this information, the Federal decision maker would be incrementally considering the permit and not the entire proposed project. A sedimentation and erosion control plan must be submitted for the transportation facilities, preparation plant, coal stockpile, refuse pile, and conveyor system. Plate III-5, in its present form, cannot be used to verify adequacy of sedimentation control. A stability analysis pursuant to 817.72 through 817.86 should be developed for the proposed refuse pile. An analysis of probable hydrologic consequences pursuant to 780.21(e) should be developed for the proposed ventilation shafts as well as for other applicable structures.

ATTACHMENT B

United States Department of the Interior

MINERALS MANAGEMENT SERVICE
CENTRAL REGION

SL-066490

IN REPLY
REFER TO:

Office of the District Mining Supervisor
2040 Administration Building
1745 West 1700 South
Salt Lake City, Utah 84104

June 21, 1982

Memorandum

To: Utah State Coordinator, Office of Surface Mining (OSM), Denver, Colorado

From: District Mining Supervisor

Subject: Kaiser Steel Corporation, South Lease Coal Property, Emery County, Utah—Application for an Underground Mine Permit

The subject permit application consisting of seven volumes, which was forwarded to this office with your form letter dated April 29, 1982, has been reviewed as requested for completeness and technical adequacy relating to the responsibilities of the MMS.

The application follows the format and content of the Division of Oil, Gas and Mining (DOGM) general guidelines. The MMS is responsible to see that all mining of coal on Federal coal leases is in compliance with Federal Regulations 30 CFR 211. We have requested that all mining plan submittals include a cross-reference index to the 30 CFR 211 regulations.

We have determined that the subject application is adequate with the stipulations listed below for our administration of the associated Federal coal leases during the five year permit period. The permit plan also shows that maximum economic recovery MER will be achieved.

The following MMS stipulations are to be included in the final approval of the application:

Stipulation No. 1. If mining on Kaiser leases north and east of the permit area is contemplated from access within the permit area, conceptual plans for mining the north and/or east area must be submitted within 180 days of permit issuance to the MMS for their concurrence. Approval of mining in this area will be a separate action.

Stipulation No. 2. Modifications or changes to approved underground mine plans must be submitted to MMS for approval prior to any mining.

Stipulation No. 3. The company will involve MMS in all situations involving changes in the approved plan for recovery or abandonment of the coal resource. Normally, each problem will require a joint (management and MMS) site specific inspection, and a joint review followed by a formal submittal of a plan for approval by the MMS.

Stipulation No. 4. Submit as a supplement to the mining plan the Roof Control and Ventilation System and Methane and Dust Control Plans, most recently approved by Mine Safety and Health Administration (MSHA), including the approved mine maps submitted as part of these plans. All such plans changed or modified and approved by MSHA will be submitted as addendums or modifications to the formal mining plan. Information submitted to the various agencies must be compatible.

Stipulation No. 5. Submit as a supplement or an addition to the narrative, plans for protecting existing oil, gas, and water wells or any underground resources when encountered.

Jackson W. Moffitt

ATTACHMENT C

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Moab District
P. O. Box 970
Moab, Utah 84532

IN REPLY REFER TO:
3400
(U-066)
RECEIVED
JUL 1982
BLM
MOAB, UTAH
JUL 06 1982

Memorandum

To: Administrator, Office of Surface Mining, Denver, Colorado
Attention: Sarah Bransom

From: District Manager, Moab
Associate

Subject: Mine Plan Review for Kaiser South Lease

Subject mine plan (UT-0061) has been reviewed by our resource specialists. Comments are limited to the following:

1. The sampling design used in the archaeological inventory was very poorly designed. The design was based on the premise that sites would be only located around springs. However, the inventory results proved that this premise was incorrect. The design of the inventory voided the possibility of relating the sampled area to the coal lease area as a whole so that the inventory results are not representative of cultural resources in the lease area.

2. A golden eagle nest site is located in T. 16 S., R. 14 E., Section 36: SW¼SW¼. Eagle activity or young were not observed at the nest site on June 4, 1982; however, the nest appeared to be in good repair and mute was evident. Wildlife monitoring studies should assess nesting activity because of proposed locations for the mine portal pad, water storage tanks and coal stockpiles within 0.5 miles of this nest which is the standard buffer zone within which permanent facilities are not allowed. Mitigation of impacts to the nest site will be required of Kaiser in consultation with the Fish and Wildlife Service and the BLM and may include relocation of proposed facilities.

3. One stock tank identified on plate X-1 lies on or near a proposed road. In the event this tank is damaged or lost, a replacement would be required.

4. Wildlife habitat could be enhanced by providing line trickle guzzlers off of the proposed waterline. Such facilities would greatly enhance habitat for chuckar and antelope.

5. In accordance with Public Law 94-579, a two year notification to the grazing permittee may be required. If determined necessary, this notification will be provided to the permittee by the BLM.

Kenneth V. Rhea

cc: State Director, Utah (U-931)

ACT/015/008

Scott M. Matheson
Governor

James O. Mason, M.D., Dr.P.H.
Executive Director
801-533-6111

DIVISIONS
Community Health Services
Environmental Health
Family Health Services
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OFFICES
Administrative Services
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Medical Examiner
State Health Laboratory

STATE OF UTAH
DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL HEALTH
150 West North Temple, P.O. Box 2500, Salt Lake City, Utah 84110-2500

Marv H. Maxell, Ph.D., Acting Director
Room 474 801-533-6121

533-6146
October 29, 1982

Douglas C. Pearce
Kaiser Steel Corporation
Sunnyside Mines
P.O. Box D
Sunnyside, UT 84539

RE: South Lease Mining Plan

Dear Mr. Pearce:

As indicated during the October 20, 1982 inspection we have initiated our review of the 1982 Kaiser South Lease mining application. However, more information is needed on the sanitary disposal, sediment runoff control facilities and groundwater TDS data before the review can be completed.

The sanitary system for the 225 employees must be reviewed and approved by this office. It is understood that the company is considering a septic tank and drainfield system instead of the package plant which was originally proposed.

More complete information is needed on the sediment runoff control plan including areas of runoff, runoff volume and treatment capacity. The design of the rotary breaker refuse pile rock drain and sediment control facilities also needs further explanation.

The company will be required to comply with the Colorado River Salinity Control Forum policy of no discharge of salt where practical. The company should obtain analysis of the groundwater which may be encountered in the latter stages of mine development and prepare an appropriate compliance program.

The company may contact me regarding any of these requests at 533-6146.

Sincerely,

Steven R. McNeal
Public Health Engineer
Bureau of Water Pollution Control

cc: Southeastern District Health Dept.
Southeastern AOG
Division of Oil, Gas & Mining - Tom Munson
Environmental Health Administration
1311

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NOV 01 1982
DIVISION OF
OIL, GAS & MINING

FILE ACT/015/008

PETER W. BILLINGS
ALBERT J. COLTON
RALPH H. MILLER
GEORGE D. MELLING, JR.
WARREN PATTEN
M. BYRON FISHER
STANFORD B. OWEN
WILLIAM H. ADAMS
ANTHONY L. RAMPTON
PETER W. BILLINGS, JR.
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THOMAS CHRISTENSEN, JR.
RAND M. ELISON
CHARLES B. CASPER
RANDALL A. MACKEY
MICHAEL F. JONES
JAY B. BELL
DANIEL W. ANDERSON
TERRIE T. McINTOSH
GARY E. JUBBER
DENISE A. DRAGOO
KEVIN N. ANDERSON
W. CULLEN BATTLE
CHRISTOPHER A. JOHNSON

LAW OFFICES OF
FABIAN & CLENDENIN
A PROFESSIONAL CORPORATION
EIGHTH FLOOR
CONTINENTAL BANK BUILDING
SALT LAKE CITY, UTAH 84101-2097

TELEPHONE
(801) 531-8900

HAROLD P. FABIAN
1885-1975
BEVERLY S. CLENDENIN
1889-1971
SANFORD M. STODDARD
1909-1974

October 22, 1982

Mr. Cy Young
Division of Oil, Gas & Mining
4241 State Office Building
Salt Lake City, Utah 84114

Dear Mr. Young:

Enclosed is the final Memorandum of Understanding concerning Kaiser Steel's South Lease Mine in Emery County, Utah. Dan Hunter, Emery County Planner, and Joe Taylor, Kaiser Steel Corporation, have agreed to the terms of this Memorandum.

Rodger Weaver will meet with all parties interested in commenting on the South Lease socioeconomic assessment at 1:30 p.m., November 4, 1982, in the Southeastern Utah Association of Governments offices, located in the Carbon County Industrial Park in Price just off Highway 6-50. Kaiser is scheduling a tour of the South Lease Mine property during the morning of November 4th. Anyone interested in participating in the tour should contact me prior to that date and plan on meeting at the Green Well Motel in Price at 8:30 a.m. on November 4, 1982.

In addition to the meeting on November 4, 1982, OSM will be holding a hearing at 7:00 p.m. on November 3, 1982, in Price, concerning the need for further environmental analysis of the South Lease Mine property.

Please contact me if you have any concerns with the Memorandum of Understanding or upcoming meetings concerning the South Lease Mine.

Very truly yours,

Denise A. Dragoo

Denise A. Dragoo

DAD:jk
Enclosure
cc: Joe Taylor

RECEIVED
OCT 25 1982
DIVISION OF
OIL, GAS & MINING

MEMORANDUM OF UNDERSTANDING

THIS MEMORANDUM is made and entered into this _____ day of _____, 1982, by and between KAISER STEEL CORPORATION, the UNITED STATES DEPARTMENT OF THE INTERIOR, OFFICE OF SURFACE MINING, the STATE OF UTAH, DEPARTMENT OF COMMUNITY AND ECONOMIC DEVELOPMENT, OFFICE OF STATE PLANNING COORDINATOR, CARBON COUNTY, EMERY COUNTY, CARBON COUNTY COUNCIL OF GOVERNMENTS, EMERY COUNTY COUNCIL OF GOVERNMENTS, and the SOUTHEASTERN UTAH ASSOCIATION OF GOVERNMENTS (hereinafter referred to as "parties").

RECITALS:

WHEREAS, all parties have agreed that development of an analysis of the potential social, economic, demographic and public finance impacts related to Kaiser Steel's proposed South Lease Mine is desirable, and

WHEREAS, the use of the Utah Process Economic and Demographic Impact Model (UPED)and public services facilities guidelines jointly developed by state and local governments of Utah are acceptable approaches to begin defining these potential impacts, and

WHEREAS, the parties understand that the South Lease Mine may create socioeconomic impacts which require mitigation, and

WHEREAS, Kaiser Steel Corporation's South Lease Mine is subject to and must comply with the National Environmental Policy Act of 1969 and implementing regulations, the Emery County Zoning Resolution (1970, as amended), the Utah Resource Development Code, Utah Code Ann. Section 63-51-1 et seq. (Supp. 1981) and the Interlocal Cooperation Act agreement between Emery and Carbon Counties (1982) and that Kaiser Steel must mitigate the impacts of said mine, if any, in accordance with said statutes, regulations, and ordinances, and

WHEREAS, the results of a socioeconomic assessment may potentially be used in identifying impacts towards satisfying the above-mentioned statutory and regulatory requirements.

NOW, THEREFORE, it is agreed that:

1. All parties will be involved in development of the Scope of Work for a socioeconomic study of Kaiser Steel's proposed South Lease Mine.

2. All parties shall review the study contract for the purpose of insuring that all socioeconomic impacts are identified and thoroughly addressed.

3. All parties shall review and have the opportunity to respond to the key assumptions utilized in the assessment, including, but not limited to: employment multipliers, populations projections and allocations, in-migration assumptions, residential patterns, demographic characteristics of South Lease related population, household size, public services and facilities guidelines and associated forecasting methods, and public sector cost and revenue data and associated forecasting methods.

4. All parties shall reach consensus on the baseline projections and alternative development scenarios to be utilized in the assessment process.

5. A draft report shall be produced and reviewed by all parties within the timeframe established by Kaiser Steel and the contractor. The contractor shall respond to all comments and issues raised within this review period prior to development of the final report.

6. Nothing in this agreement shall be construed as binding the parties to the assessment results produced by the contractor.

7. This agreement shall become effective as soon as signed by the parties and shall continue unless formally terminated by any party after thirty days' notice in writing.

8. Other sources of information including, but not limited to: "The Socioeconomic Assessment of the South Lease Mine" (OSM, 1981), the "Central Utah Coal Environmental Impact Statement" (USGS 1979), and applicable local resource documents may be used in developing appropriate mitigation measures.

9. All parties agree to participate in developing and executing an impact mitigation plan, to alleviate the social, economic, demographic and public finance impacts as agreed to and identified by all parties as being associated with development of the South Lease Mine.

10. Kaiser Steel Corporation will maintain sole responsibility for funding the study produced under this agreement and ultimate authority for determining the costs associated therewith.

IN WITNESS WHEREOF, this Memorandum is executed the day and year first written above.

KAISER STEEL CORPORATION

BY _____
Joe Taylor, Vice-President

UNITED STATES DEPARTMENT OF INTERIOR,
OFFICE OF SURFACE MINING

BY _____
Richard W. Dawes
Deputy Administrator
Western Technical Center

STATE OF UTAH, OFFICE OF STATE
PLANNING COORDINATOR

BY _____
Marthe Diner, Director

STATE OF UTAH, DEPARTMENT OF COMMUNITY
AND ECONOMIC DEVELOPMENT

BY _____
Buzz Hunt, Director
Division of Community Development

CARBON COUNTY, A BODY POLITIC AND
CORPORATE

BY _____
Lee Semken, Chairman
Board of Carbon County Commissioners

EMERY COUNTY, A BODY POLITIC AND CORPORATE

BY_____
Donald R. Curtis, Chairman
Board of Emery County Commmssioners

CARBON COUNTY COUNCIL OF GOVERNMENTS

BY_____

EMERY COUNTY COUNCIL OF GOVERNMENTS

BY_____

SOUTHEASTERN UTAH ASSOCIATION OF GOVERNMENTS

BY_____

October 21, 1982

Memo to Coal File:

RE: Kaiser's South Lease Site
Inspection
Kaiser Steel Corporation
ACT/015/008
Emery County, Utah

On October 20, 1982, the proposed South Lease property was visited by Steve McNeal of the Department of Health and Tom Munson of DOGM. Kaiser Steel employee Doug Pearce accompanied Division personnel on the field tour.

Discussions regarding retention ditches, culvert locations and facilities layout were carried out. Problem areas where observed and certain potential hazards were discussed. The Division and the Department of Health commented on potential problem areas and what information would potentially be needed to respond to the ACR.

THOMAS MUNSON TM
RECLAMATION HYDROLOGIST

TM/btb

Statistics:

Vehicle: #EX 328.8--321 miles (Motor Pool)
Per Diem: None
Grant: A & E

FILE ACT/015/008
Copy EXH to C4

Scott M. Matheson
Governor

James O. Mason, M.D., Dr.P.H.
Executive Director
801-533-6111

DIVISIONS
Community Health Services
Environmental Health
Family Health Services
Health Care Financing

OFFICES
Administrative Services
Community Health Nursing
Management Planning
Medical Examiner
State Health Laboratory

STATE OF UTAH
DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL HEALTH
150 West North Temple, P.O. Box 2500, Salt Lake City, Utah 84110-2500

Marv H. Maxell, Ph.D., Acting Director
Room 474 801-533-6121

October 20, 1982
533-4207

Kaiser Steel Corporation
Executive Offices - Kaiser Center
P. O. Box 58
Oakland, California 84604

Gentlemen:

Re: South Lease Coal Property

We understand from your "Application for an Underground Coal Permit" that you intend to eventually construct culinary water supply facilities for the mining operation, but during the first phase water is to be hauled from an existing system.

Before you construct a public water supply system, complete plans and specifications for it must be approved by this office. These plans and specifications must show sufficient detail to determine their compliance with the Utah Public Drinking Water Regulations. When you haul water, the methods must be as outlined in the enclosed "Recommended Procedures for Hauling Culinary Water". The water can only be obtained from a water system rated "Approved" by us.

Sincerely,

Michael B. Georgeson

Michael B. Georgeson, P.E.
Chief, Engineering Section
Bureau of Public Water Supplies

LJM:blp

Enclosure

cc: Horrocks Engineers
Southeastern District Health Dept.
Division of Oil, Gas and Mining

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OCT 22 1982
DIVISION OF
OIL, GAS & MINING

FILE ACT/015/008

PETER W. BILLINGS
ALBERT J. COLTON
RALPH H. MILLER
GEORGE D. MELLING, JR.
WARREN PATTEN
M. BYRON FISHER
STANFORD B. OWEN
WILLIAM H. ADAMS
ANTHONY L. RAMPTON
PETER W. BILLINGS, JR.
GORDON CAMPBELL
THOMAS CHRISTENSEN, JR.
RAND M. ELISON
CHARLES B. CASPER
RANDALL A. MACKEY
MICHAEL F. JONES
JAY B. BELL
DANIEL W. ANDERSON
TERRIE T. McINTOSH
GARY E. JUBBER
DENISE A. DRAGOO
KEVIN N. ANDERSON
W. CULLEN BATTLE
CHRISTOPHER A. JOHNSON

LAW OFFICES OF
FABIAN & CLENDENIN
A PROFESSIONAL CORPORATION
EIGHTH FLOOR
CONTINENTAL BANK BUILDING
SALT LAKE CITY, UTAH 84101-2097

TELEPHONE
(801) 531-8900

HAROLD P. FABIAN
1885-1975
BEVERLY S. CLENDENIN
1889-1971
SANFORD M. STODDARD
1909-1974

October 14, 1982

Mr. Cy Young
Division of Oil, Gas & Mining
4241 State Office Building
Salt Lake City, Utah 84114

Dear Mr. Young:

Enclosed is a copy of the Draft Socioeconomic Impact Analysis of Kaiser's South Lease Coal Mine Development prepared by Rodger Weaver & Associates. This Draft is being distributed for your review. Comments concerning the study should be forwarded to Rodger Weaver at 1960 East 900 South, Salt Lake City, Utah 84108 as soon as possible. A meeting has been scheduled to discuss the Draft on November 4, 1982 at 1:30 p.m. in the offices of the Southeastern Utah Association of Local Governments located at Price, Utah. Comments should be submitted to Rodger at or before this meeting.

You may also be interested in attending an OSM hearing concerning the proposed South Lease Mine scheduled for November 3, 1982 in Price, Utah. The purpose of this meeting is to determine the need for more detailed environmental analysis concerning the mining and reclamation plan proposed by Kaiser Steel Corporation.

Very truly yours,

Denise A. Dragoo

Denise A. Dragoo

DAD:jk

Enclosure

cc: Joe Taylor

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OCT 15 1982
DIVISION OF
OIL, GAS & MINING

D R A F T

SOCIOECONOMIC IMPACT ANALYSIS

KAISER STEEL CORPORATION
SOUTH LEASE COAL MINE DEVELOPMENT

Carbon and Emery Counties, Utah

WEAVER ASSOICATES
1960 East 9th South
Salt Lake City, Utah 84108
(801) 581-3362

October, 1982

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OCT 15 1982
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OIL, GAS & MINING

Chapter One

CURRENT CONDITIONS AND BASELINE PROJECTIONS

This chapter presents a description of current socioeconomic conditions in the Carbon and Emery County areas expected to be impacted by Kaiser's proposed South Lease Coal development. Section I presents 1980 population and household counts from the Bureau of the Census for the affected counties, Census County Divisions(CCD's), and communities, along with corresponding estimates of employment produced as part of the Uintah-Southwestern Coal Leasing Environmental Impact Statement(EIS) currently nearing completion. Section I also presents the Baseline population and household projections produced in the EIS. Sections II, III and IV describe the current and expected future states of local governmental and human service delivery capacities in the impact area.

SECTION I - CURRENT ECONOMIC AND DEMOGRAPHIC CONDITIONS AND BASELINE PROJECTIONS

The baseline projections reflect the future based on the existing economic structure of the areas and the changing demographic characteristics of the population. The baseline is not a prediction of the future but rather an attempt to depict the direction current trends are likely to take in the area without the South Lease project. Alternative projections which include the South Lease project are then compared to the baseline projection to determine the impact the project will have on the area. Characteristic of the baseline projections are declining rates of growth over time. It is assumed that with a given economic structure, an area will begin to stabilize over the years as its economy matures; under these conditions accelerated growth would require increase in the basic employment sectors that would change the area's economic structure. The Utah Process Economic and Demographic Impact Projection Model (UPED) and the Spatial Allocation Model (SAM) were applied in making the baseline projections presented here.

The central assumptions used in developing the baseline projections for Carbon abd Emery Counties are as follows:

Coal production is assumed to increase to 21 mtpy by the year 1990. This inrease in the demand for coal is created primarily by the development of the first two units of the Intermountain Power Project and units 3 and 4

of the Hunter Power Plant complex. After 1990 coal production is assumed to remain stable. Production is allocated among the Census County Divisions (CCD's) in accordance with expectations of industry and local planners. Coal mining in the Green River CCD (the locations of South Lease) is assumed to be phased out by 1988 in the Baseline.

Uranium production and employment are assumed to remain at their 1982 depressed levels throught the year 2000.

Power Plant development. The Utah Power and Light Hunter unit 3 is assumed to be completed on schedule in 1983. The Hunter unit 4 is assumed to be delayed three years from its original schedule, starting construction in 1985 with completion scheduled in 1987.

Other driving sectors' growth is assumed to follow historical paths throughout the projection period.

Commuting patterns were developed through the use of a gravity model with appropriate modifications to reflect current conditions as developed from employers and other primary data sources.

It should be noted that the baseline projections assumed growth in Utah's coal industry to begin in 1982 and move toward the target of 21 MTPY by 1990. However, for growth in Utah's coal industry to occur the national recession must first be cured. In early 1982 the prognistication from the Reagan administration was that the national recession had bottomed out and that

recovery was soon at hand. As we are all aware these forecasts have proven false and we are still at the depths of a serious recession. Consequently the baseline projections presented here, which show substantial growth in Carbon and Emery Counties in 1982 and 1983, as somewhat over optimistic. In other words the short term projections have been overstated due to the lingering recession, but once the recession is cured the Utah coal industry should rebound and the more medium and long term projections presented here should hold true.

The baseline projection for Carbon County, shown in Table 1, indicates very healthy growth through the decade of the eighties, growing at a annual rate of 5%. Emery County (Table 2) is projected to grow much slower, at an annual rate of 1%. In fact Emery County is expected to peak in population in 1986 and then decline slightly following the completion of the Hunter Power Plant Complex. The 1% annual growth rate falls far below the rate experienced during the seventies (8%) but it must be remembered that Emery County had a very small population base in 1970 and was impacted significantly by the development of power plants and coal development to fuel these power plants by Utah Power and Light. This kind of unusual growth phenomena is not expected to continue through the decade of the eighties.

The allocation of the baseline projections to the County Census Divisions and to the Communities is shown in Tables 3 through 6. The allocation of the baseline projections to the community level were accomplished from assumptions developed by Emery and Carbon County and the Southeast Utah Association of Government.

The East Carbon CCD, including the communities of East Carbon and Sunnyside are projected to decline in popultation throughout the next two decades. This decline is created by the closure of U.S. Steel's Horse Canyon mine which was projected to be phased out over the next few years. With the announcement of the closure of this mine in mid-October 1982 the decline in population in this CCD may occur even more rapidly than projected here.

The Helper CCD is anticipated to grow at a 3.3% rate over the decade of the eighties with most of the growth anticipated in the town of Helper. Very little growth is anticipated for the community of Scofield because of the lack of infrastructure to support growth in that area.

The Price CCD is anticipated to grow at a 6% annual rate throughout the decade while the city of Price is projected at a 6.2% annual rate. The Price area grows not only as a result of Coal mining in the CCD but also due to growth througout the area. The Price areas grows faster than any surrounding areaa because it serves as a regional trade center and as the region grows, Price grows. The town of Wellington is also projected to grow while stability is projected for the town of Hiawatha.

The baseline projection for the Green River CCD and Green River City indicate very little growth through the decade, less than 1% per year. With the stagnant Uranium industry there is little anticipated basic employment to stimulate growth in this area.

CARBON COUNTY
Baseline Population and
Employment Projections
1982 - 2000

Year	Population	Households	School-age Population	Pop. 65 yrs. and over	Total Employment
1982	24,183	7,907	5,366	2,323	10,608
1983	26,542	8,610	5,976	2,497	11,253
1984	28,652	9,223	6,580	2,662	11,908
1985	29,942	9,642	6,923	2,759	12,501
1986	30,959	9,949	7,275	2,827	12,885
1987	32,869	10,496	7,890	2,974	13,406
1988	33,686	10,695	8,238	3,028	13,691
1989	34,496	10,886	8,565	3,070	14,008
1990	35,159	11,045	8,863	3,111	14,283
1991	35,769	11,195	9,166	3,145	14,512
1992	36,285	11,324	9,458	3,170	14,703
1993	36,713	11,422	9,673	3,190	14,881
1994	37,039	11,494	9,823	3,189	15,038
1995	37,218	11,532	9,889	3,209	15,164
1996	37,317	11,569	9,913	3,223	15,278
1997	37,394	11,612	9,890	3,212	15,397
1998	37,478	11,657	9,850	3,207	15,523
1999	37,572	11,715	9,780	3,213	15,658
2000	37,656	11,768	9,692	3,205	15,800

EMERY COUNTY
Baseline Population and
Employment Projections
1982 - 2000

Year	Population	Households	School-age Population	Pop. 65 yrs. and over	Total Employment
1982	13,733	3,910	3,590	914	6,627
1983	12,906	3,645	3,424	841	6,042
1984	12,727	3,567	3,444	819	6,183
1985	14,077	3,947	3,835	899	6,733
1986	14,974	4,190	4,146	947	7,012
1987	14,094	3,918	3,987	883	6,488
1988	14,287	3,950	4,117	890	6,490
1989	14,546	3,997	4,256	897	6,592
1990	14,778	4,042	4,390	906	6,684
1991	14,893	4,058	4,497	907	6,720
1992	15,001	4,076	4,607	908	6,753
1993	15,060	4,080	4,676	906	6,776
1994	15,077	4,074	4,712	899	6,792
1995	15,062	4,063	4,716	900	6,801
1996	15,006	4,051	4,697	898	6,807
1997	14,932	4,037	4,654	888	6,809
1998	14,857	4,024	4,601	881	6,813
1999	14,782	4,013	4,534	876	6,818
2000	14,702	4,001	4,459	867	6,825

BASELINE POPULATION AND HOUSEHOLD PROJECTIONS -- BY COMMUNITY
East Carbon Census County Division (CCD) -- Carbon County

Year	East Carbon CCD Total Pop.	Hshlds.	East Carbon Pop.	Hshlds.	Sunnyside Pop.	Hshlds.	Unincorp Pop.	Hshlds.
1982	2,584	845	1,952	638	614	201	18	6
1983	2,514	817	1,900	617	597	194	17	6
1984	2,468	794	1,865	600	587	189	16	5
1985	2,412	776	1,822	586	574	185	16	5
1986	2,366	761	1,788	575	562	181	16	5
1987	2,281	729	1,724	551	542	173	15	5
1988	2,228	707	1,684	535	530	168	14	4
1989	2,244	708	1,696	535	533	168	15	5
1990	2,254	710	1,703	536	536	169	15	5
1991	2,264	710	1,711	536	538	169	15	5
1992	2,272	711	1,717	537	540	169	15	5
1993	2,275	710	1,719	536	541	169	15	5
1994	2,270	706	1,715	533	540	168	15	5
1995	2,260	700	1,708	529	537	166	15	5
1996	2,245	695	1,696	525	534	165	15	5
1997	2,228	692	1,684	523	530	165	14	4
1998	2,211	687	1,671	519	525	163	15	5
1999	2,195	684	1,659	517	522	163	14	4
2000	2,177	681	1,645	514	517	162	15	5

BASELINE POPULATION AND HOUSEHOLD PROJECTIONS -- BY COMMUNITY
Helper Census County Division (CCD) -- Carbon County

Year	Helper CCD Total Pop.	Hshlds.	Helper Pop.	Hshlds.	Scofield Pop.	Hshlds.	Unincorp Pop.	Hshlds.
1982	5,074	1,658	2,992	978	117	38	1,965	642
1983	5,455	1,771	3,217	1,044	122	40	2,116	687
1984	5,574	1,792	3,288	1,057	125	40	2,161	695
1985	5,878	1,889	3,468	1,115	129	41	2,281	733
1986	6,096	1,961	3,603	1,159	133	43	2,360	759
1987	6,292	2,010	3,724	1,190	135	43	2,433	777
1988	6,448	2,047	3,817	1,212	139	44	2,492	791
1989	6,583	2,077	3,892	1,228	140	44	2,551	805
1990	6,573	2,067	3,891	1,224	140	44	2,542	799
1991	6,666	2,082	3,947	1,233	145	45	2,574	804
1992	6,747	2,109	3,994	1,248	146	46	2,607	815
1993	6,809	2,120	4,031	1,255	149	46	2,629	819
1994	6,857	2,130	4,059	1,261	150	47	2,648	822
1995	6,793	2,103	4,021	1,245	148	46	2,624	812
1996	6,802	2,106	4,027	1,247	149	46	2,626	813
1997	6,801	2,106	4,027	1,248	149	46	2,625	812
1998	6,802	2,113	4,027	1,251	149	46	2,626	816
1999	6,811	2,121	4,032	1,256	149	46	2,630	819
2000	6,815	2,130	4,034	1,261	150	47	2,631	822

BASELINE POPULATION AND HOUSEHOLD PROJECTIONS BY COMMUNITY
Price Census County Division (CCD) -- Carbon County

Year	Price CCD Total Pop.	Hshlds.	Price Pop.	Hshlds.	Wellington Pop.	Hshlds.	Hiawatha Pop.	Hshlds.	Unincorp Pop.	Hshlds.
1982	16,525	5,401	10,043	3,282	1,550	507	251	82	4,681	1,530
1983	18,573	6,030	11,313	3,673	1,770	575	253	82	5,237	1,700
1984	20,610	6,630	12,594	4,050	1,991	643	255	82	5,770	1,855
1985	21,653	6,962	13,229	4,254	2,118	681	254	82	6,052	1,946
1986	22,497	7,234	13,780	4,431	2,213	712	256	82	6,248	2,009
1987	24,296	7,761	14,922	4,767	2,392	764	257	82	6,725	2,148
1988	25,010	7,940	15,401	4,889	2,463	782	260	83	6,886	2,186
1989	25,670	8,097	15,848	4,999	2,528	797	259	82	7,035	2,219
1990	26,332	8,280	16,299	5,125	2,594	816	257	81	7,182	2,258
1991	26,839	8,388	16,656	5,205	2,645	827	255	80	7,283	2,276
1992	27,265	8,521	16,964	5,301	2,687	840	255	80	7,359	2,300
1993	27,629	8,607	17,234	5,369	2,723	848	253	79	7,419	2,311
1994	27,911	8,669	17 455	5,421	2,752	855	250	78	7,454	2,315
1995	28,164	8,720	17,659	5,467	2,777	860	251	78	7,477	2,315
1996	28,270	8,753	17,770	5,502	2,788	863	250	77	7,462	2,310
1997	28,365	8,809	17,850	5,543	2,797	869	252	78	7,466	2,319
1998	28,465	8,840	17,984	5,585	2,807	872	254	79	7,420	2,304
1999	28,567	8,900	18,094	5,637	2,817	878	254	79	7,402	2,306
2000	28,664	8,957	18,202	5,688	2,827	883	254	79	7,381	2,307

BASELINE POPULATION AND HOUSEHOLD PROJECTIONS BY COMMUNITY
Green River Census County Division(CCD)
Emery County

Year	Green River Total CCD Pop.	Hshlds.	Green River (part) Pop.	Hshlds.	Unincorp Pop.	Hshlds.
1982	1,088	310	933	266	155	44
1983	1,035	293	888	251	147	42
1984	991	277	850	238	141	39
1985	1,017	285	872	244	145	41
1986	1,047	293	897	251	150	42
1987	1,060	295	909	253	151	42
1988	1,098	303	941	260	157	43
1989	1,120	308	960	264	160	44
1990	1,138	311	976	267	162	44
1991	1,155	315	990	270	165	45
1992	1,172	318	1,005	273	167	45
1993	1,180	320	1,012	274	168	46
1994	1,184	320	1,015	274	169	46
1995	1,188	321	1,019	275	169	46
1996	1,188	321	1,019	275	169	46
1997	1,187	320	1,019	275	168	45
1998	1,184	321	1,015	275	169	46
1999	1,182	321	1,013	275	169	46
2000	1,180	322	1,012	276	168	46

SECTION II - OVERVIEW

This section discusses major public and private sector service provision infrastructure in the counties and communities to be impacted by the South Lease Development.

A. Carbon County

A.1. As indicated in the baseline population projections, the Carbon County area is expected to increase in population from the 1980 census count of 22,105 to almost 33,500 by the turn of the century. These estimates are baseline and do not include all proposed future developments, but are based upon what are considered highly probable developments. The majority of the population increase is projected to occur in the next ten years and then slow somewhat between 1990 and 2000. Population increases of the magnitude projected for Carbon County presents local government with challenges in increasing service infrastructures and systems.

Housing and those services associated with the provision of shelter will be the most seriously impacted. Between 1980 and 1990, almost 3,000 additional dwelling units will be required.

Water for culinary and industrial purposes is the single greatest constraint to future economic development in Carbon County. Treatment and delivery systems have been upgraded with the construction of the Price River Water Improvement District's new water system, but developing additional sources of water still remains a top priority. In order to increase water supplies for the Price River Valley, the county is presently looking toward developing several alternative water sources. Primary among these alternatives is the Indian Head Dam proposal. This proposal calls for a containment of the White River, 25 miles north of Helper.

Meeting sewage treatment needs in the area is the responsibility of the Price River Water Improvement District, which operates a

plant near Wellington and serves the entire Price River Valley. To meet the needs of anticipated population growth, the PRWID has planned another treatment unit to be added to the present plant.

A third and underlying issue in the future of Carbon County is the direction in which growth occurs. There are presently no clear cut plans or policies that direct residential growth in any one area. To date, most of the residential growth has occurred in Price City, the largest municipality in the county. Since the construction of the new PRWID water system, growth patterns have changed and more residential development is evident in the unincorporated county.

Following is a brief description of Carbon County's major residential areas and those which may experience considerable growth.

A.2. Price City - Price City is the largest city in east central Utah and as such is the residential, commercial and educational center of both Carbon and Emery counties. With population of 9,086, Price City is anticipated to grow to nearly 14,080 by the turn of the century. However, in terms of service requirements, Price must provide for a population of 20,000 because the surrounding populations use many of the city's facilities (i.e., parks, recreation, libraries, business district, public safety). Thus, to maintain its role as a regional, commercial and trade center, Price must continue to plan for more than its incorporated population increase.

The primary needs of Price City are basic to housing development. A new water storage tank and sewage collection line must be constructed to facilitate residential development in the city. The two projects will cost over $1.5 million. Since 1974, Price has annexed over 600 acres. Although the water and sewer lines in the newly developing areas are adequate, the existing system is aged and undersized.

A third major project of the city is redevelopment of the downtown district. Commercial growth has occurred on the east

end of the city. Like many other communities, the threat is that strip development will affect the core downtown business district. Price is presently involved in a plan to form a redevelopment district for the downtown area to improve the existing facilities and land uses.

Price is generally perceived as a financially affluent city and thus has a difficult time obtaining state and federal funds. The fact is that Price City's revenues are barely adequate to meet its annual needs. The city will have to incur debt to finance the large projects and seek other assistance to supplement their bonding capacity.

A.3. Wellington City - Wellington is located approximately six miles east of Price and has historically been a small agricultural/mining residential community with limited commercial development. Though Carbon County's population has shown considerable growth since 1972, Wellington has shared only minimally in the growth experience because of its dependence on Price City for culinary water. In March of 1972, Price placed a moratorium on all outside water connections, which effectively stopped growth in Wellington and the unincorporated areas between Helper and Price.

Wellington's population in 1980 was 1,406, which is 6 percent of the total county population. If Wellington's population were to continue to grow at the previous rate, it would increase to 1,737 by 1985.

Evidence of Wellington's willingness to accept additional residential growth is its decision to pursue an aggressive annexation policy during 1979-1980. Now severed by the Price River Water Improvement District's culinary water system, Wellington can offer water connections to new development. Several medium-sized single and multi-family developments have been approved. In anticipation, the city recently commissioned a comprehensive plan to be completed

by an engineering firm which will inventory and evaluate its basic service needs.

Water and sewer distribution, storage and collection are obvious needs that must be addressed. Preliminary engineering studies estimate that the cost of upgrading the city water system will approach $750,000. Streets and roads in the city are generally unpaved or improved only to minimal standards. A master road system to service growth areas is needed. Other projects in Wellington will include upgrading the fire and police protection facilities and programs, the renovation or construction of a new city hall/shop facility and provisions to deal with solid waste generated by increased residential growth.

A.4. East Carbon City/Sunnyside - East Carbon City and Sunnyside are two separate municipal units located contiguously and for the purpose of basic service delivery systems are integrated. Located approximately 25 miles east of Price, the East Carbon area is isolated by distance from the main population centers of Carbon County. This isolation requires that the area possess its own services, i.e., water and sewage systems, solid waste, police, schools, etc.

The combined East Carbon City/Sunnyside area constitutes the third largest residential population in Carbon County. The population of the area in 1980 was estimated to be 2,570, which is 13 percent of the county's population. The area serves a residential center for the nearby coal developments operated by Kaiser Steel Corporation and U.S. Steel Company.

Because of its isolation, the East Carbon/Sunnyside area has experienced only moderate population growth since 1970. The future for growth in the area is made questionable both by its isolation and because Sunnyside is owned by Kaiser Steel Corporation. The willingness of Kaiser Steel to upgrade municipal facilities to accomodate workers for other energy companies or projects is as yet undetermined.

Until recently, the primary infrastructural constraint to population growth in the East Carbon area has been the "Unapproved" designation of the municipalities' joint water system. In 1982 the voters of East Carbon and Sunnyside approved a revenue bond issue to finance a new water treatment plant and distribution system. Two previous attempts at passing such a bond issue, dating back to 1979, had failed.

Engineering plants call for a water system capable of handling roughly a 80-90 percent population increase over the 1980 U.S. census levels.

Construction of the new plant and distribution system is scheduled to commence in the Spring of 1983.

The two municipalities installed a new sewage lagoon type treatment system in 1979. This system has the capacity to treat even the most optimistic growth projections for the area.

Other community facility needs in East Carbon include a new city hall/public safety complex. The facility would be funded from local revenues and grant funds. There is presently a grant request before the Community Impact Board for this project.

B. Emery County

B.1. Since 1979, Emery County has been the most rapidly growing county in Utah. The county's population has increased 122.9 percent since 1970 to a 1980 population of 11,455. The majority of the growth occurred since 1972, at which time Utah Power & Light Company started construction on the Huntington Power plants. Since four more plants have been scheduled for construction, Emery County's

population is expected to increase to almost 18,000 by 1990. Annual growth rates between 1980 and 1990 will average between 6 to 7 percent.

Energy development in Emery County has brought a formerly dying area economic prosperity. The county's assessed valuation has increased $49.2 million in 1975 to $180.00 million in 1979. The per capita and average family incomes in the county are among the highest in the state and unemployment rates among the lowest.

Growth, however, has not been without problems to Emery County and its towns. Rapid population increases in small rural communities have created severe service problems in virtually every Emery County community.

Housing projections for Emery County show that over 2,800 additional dwelling units will be needed by 1995. This will account for nearly 187 units per year for the next 15 years. These housing requirements raise two related concerns. The first is providing the services basic to residential development, (i.e., water, sewer, roads, etc.) The second is the rising cost of housing which makes it increasingly difficult for young families to buy homes.

Like most energy impacted areas, water and sewer facilities are continual problems in the Emery County area. In 1975 Emery County and seven of its municipalities formed a Castle Valley Special Services District to assist in developing water and sewage treatment facilities.

A $5 million bond was passed with $2.0 million for water improvements, $2.5 million for sewer improvements and $0.5 million for road improvements. Only the most immediate and severe problems were dealt with and additional capital improvements are needed with which to serve anticipated population growth. The recently released Final Environmental Impact Statement-Energy Units 3 and 4 by the Bureau of Land Management predicts that every community in Emery

County will have a deficient water supply by 1985. According to this report, Emery County's towns will have a shortfall of 1,896 connections based upon current supply. This implies that considerable investments must be made to meet future culinary water needs.

Sewage treatment capacity demands will not be nearly so heavily impacted as culinary water. According to the Emery 3 and 4 EIS, the 1985 projected shortfall is equivalent to 16,000 gallons per day. However, specific areas such as Ferron and the North Emery Water Users Association service area will experience severe shortfalls in their sewage treatment systems.

Though water and sewer are the most apparent needs, they are not the only ones. Road improvements rank high on local priority lists. Many of the streets in Emery County towns are unpaved and do not have sidewalks or gutters. Storm drainage systems are virtually non-existent.

Medical services in Emery County are minimal. Several years ago local officials engaged in an extensive physician recruitment program. With local funds, a modern medical clinic and housing for a doctor was built in Castle Dale. Early attempts met with some success; however, the turnover rate has been high. At present, the Castle Dale Clinic has two medical doctors. As the populaltion continues to grow, so will the health care needs of the county. Additional physicians and other medical care providers will be needed as will expanded facilities. A new clinic was constructed in Green River in 1980. This facility is staffed by a full-time nurse practi-tioner with weekly visits by medical doctors.

A major increase in law enforcement personnel will be required to meet the demands created by continued population growth resulting from energy development. Emery County has constructed one of the finest law enforcement facilities in the state. The Sheriff's Depart-ment serves not only the unincorporated county, but also

the incorporated county, but also the incorporated communities. As population increases in the incorporated towns they may find the need to have their own police departments. The Emery EIS predicts that 12 additional law enforcement officers will be needed by 1987.

The overriding problem in providing housing, water, sewer, schools, medical services and other local services and facilities is the cost of constructing them. Every town and the county are bonded, some to their legal debt limit. Because a lag exists between the time demands for these services and the time the tax base expands, capital facilities often are constructed after the need for them exists.

Along this same line, the major increases in assessed valuation have accrued to the benefit of the county and county-wide districts, not cities. However, it is the growth management policy of Emery County that growth occur in cities rather than the unincorporated county. This places the service delivery burden on the cities. Though Emery County has been very willing to assist cities, Utah State constitutional constraints on sharing and co-mingling city-county revenues limit its ability to participate.

Compounding the funding problems in Emery County is the recent order by the Utah State Public Service Commission to sell portions of the Hunter 1 and 2 plants to tax exempt municipalities in northern Utah. Potentially, the financial impact of this scale on Emery County is very deleterious. Although the purchasing municipalities have agreed to make "payments in lieu of property taxes" to Emery County, there is some question as to the legality of this procedure.

Although the general public attitude in Emery County continues to favor additional energy development, there is an increasing tendency to view new development proposals with a critical eye. The attitude of "anything goes" has become one of "it goes if you can demonstrate more benefits than costs."

B.2. Green River - Green River is located in Southeastern Emery County, approximately 70 miles from Price on U.S. Highway 6. Green River is basically a tourism and farming community because of its location at the crossroads of U.S. Highway 6 and I-70. Recent increases in fuel costs have had a sever impact on the tourist industry.

In addition to tourism, energy development in Green River has considerable impact. Major employers in the area are Atlas Minerals, which operates a uranium mine near the town and Energy Fuels Corporation, which is developing a mine near Green River.

Like most southeastern Utah communities, Green River would like to upgrade its parks and recreation facilities. These improvements would not only serve local citizenry, but also tourists passing through the area.

Both the water and sewer systems in Green River are in need of upgrading. The city recently received a grant from the Utah Community Impact Board to line the culinary water presedimentation basins to improve the efficiency of the water system. The U.S. Environmental Protection Agency is currently requiring a "Step I Facilities Plan" on the Green River sewer plant to determine whether to continue utilizing mechanical treatment or to allow the city to adopt the cheaper and less complicated sewer lagoon method.

SECTION III - EXISTING CONDITIONS

A. Culinary Water Systems

Within the confines of the study area four culinary water systems are currently operational. Each of these systems maintains its own treatment facilities and distribution network. The systems are briefly described below with a summary of capacities given in Table A-I.

A.1. Price City - The City owns and operates its own municipal water treatment plant and distribution system. The water treatment plant is located some 20 miles NNW of the City limits on the Price River. The sources of municipal water are:

1. water shares in Scofield Reservoir
2. springs at the Colton townsite (near the confluence of Fish Creek and White River which forms the Price River)
3. water shares in White River

The City provides water only to those residents living within the corporate boundaries of Price. The City's system is cross-connected with the Price River Water Improvement District's system which allows for continued water delivery during emergencies. The City is currently exploring options for upgrading or expanding the water treatment plant.

A.2. Price River Water Improvement District - The PRWID owns and operates a water treatment plant and main-trunk distribution system. The treatment plant is located immediately north of Price City's water treatment plant at the Royal townsite on the Price River. The PRWID does not retail treated water to individual customers within its boundaries. Instead, it wholesales water through master meters to 22 private water companies located between Helper and Wellington. The PRWID also provides water to Wellington City on a full time basis and on a peak-demand basis to Helper City.

The PRWID system currently has both excess treatment and storage capacity. Potentials for additional sources for water supplies (currently the water source is shares of Scofield Reservoir) are being studied.

A.3. East Carbon and Sunnyside Cities - In the Spring of 1983 these adjacent municipalities will jointly install a new water treatment and distribution system. The source of water is a small storage dam on Icelander Creek north of Sunnyside.

A.4. Green River City - Green River City owns and operates its own waste treatment and distribution system. The plant is located north of the City on the Green River, which is the municipal water source. Basically, the system is sound although certain distribution lines need replacement.

TABLE A-I
WATER SYSTEM CAPACITIES

	Price	PRWID	East Carbon/ Sunnyside*	Green River
Source Capacity (MGD)	3.1	1.4	2.0	
Treatment Capacity (MGD)	3.1	4.0	1.7	
Current Treatment (MGD)	2.6	1.1	1.1	
Storage Capacity (MG)	10.5	4.8	1.5	
Connections (current)	3,500	1,600	963	

*Capacities of system being installed in 1983

B. Sewage Disposal Systems

There are three sewage disposal systems within the study area. The systems are briefly described below with a summary of capacities given in Table B-I.

B.1. Price River Water Improvement Distirct - The PRWID owns and operates the regional sewage collection and treatment system covering the Price River Walley including the municipalities of Price, Wellington

and Helper as well as adjacent unincorporated areas (roughly 85-90 percent of Carbon County's total population).

The number of sewer connections has grown dramatically over the last several years and mean annual sewage flow has increased from 1.6 MGD in 1978 to 2.5 MGD in 1980 and 3.0 MGD for the first half of 1981. The plant has had consistent problems in meeting its requirements for effluent quality as set in its National Pollution Discharge Elimination System (NPDES) permit. Collection systems remain essentially as discussed in the 1979 plan. There is a suspicion that infiltration/inflow may be an increasing problem in incorporated communities, however, a more detailed assessment will be required to determine the sources and causes of this problem.

The PRWID plant was designed for 2.0 MGD mean annual average. However, the plant is currently failing to meet effluent quality standards and immediate additions are required to meet the NPDES permit conditions. In order for the plant to meet the 1980 discharge requirements, the following improvements are necessary:

Chlorine contact chamber
Chlorine containment building
Flow proportioning analyzer
Automatic chlorine tank change
Over-weight scales
Effluent flow monitoring device
Influent flow measuring device

The following additions are needed to meet 1983 standards and anticipated population:

Upgrade primary and secondary sedimentation
Scum handling
Additional digester
Additional boiler
Waste gas burner
Primary and secondary filter upgrade
Laboratory facilities
Electrical upgrade
Stand-by diesel generators
Additional primary and secondary waste treatment.

The PRWID estimates that some $3.8-$4.0 million will be required to upgrade the treatment plant to meet NPDES permit standards.

B.2. East Carbon and Sunnyside Cities - In 1980, total containment lagoon systems went into operation in East Carbon/Sunnyside and Columbia, a portion of East Carbon. The system in East Carbon/Sunnyside is capable of handling a peak flow of 487,500 gpd. The Colombia system will handle a peak flow of 60,000 gpd.

The collection systems are adequate for the current and projected population and the entire systems should be adequate to handle population growth for a minimum of 20 years. Total system capacity is estimated at 3800 population.

The new lagoon systems in East Carbon/Sunnyside and Colombia have been operating as designed for almost a year. No significant problems have been encountered and required maintenance is minimal.

B.3. Green River - The Green River treatment facility is not meeting effluent standards. The mechanical treatment facility discharges into the Green River. Poor operation and maintenance of the facility has led to its rapid deterioration. The facility should be capable of meeting 1980 effluent standards and approximately 1600 people. The current population is estimated at 1048. An EPA '201' facilities plan was recently completed which recommended abandonment of the existing facility and construction of total containment lagoons. This alternative would be the most cost-effective and require the least amount of operation and maintenance.

TABLE B-I

SEWER SYSTEM CAPACITIES

	PRWID	East Carbon/ Sunnyside	Green River
Treatment Capacity (MGD)	2.0	.488	.160
Current Treatment (MGD)	2.6	.470	.170
Connections	6,200	963	353*
Population (current)	21,249	2,566	1,048*

* Does not include Green River's 402 units of motel space.

C. Education

Each of the two counties in the study area is covered by a coterminous school district responsible for primary and secondary education within each county. The school districts are financed by the Utah State Uniform School Fund, which pays 75 percent of the basic programmatic costs of each school district, and local property tax mill levies which pay the remaining 25 percent as well as all capital construction costs. As of this writing, there is only one privately supported parochial school (grades 1-9) within the area, located in Price. At present there is one technical/vocational school operated in the two county area--the College of Eastern Utah (CEU) at Price. The College of Eastern Utah is a state-operated junior college offering complete programs in the applied sciences, the natural sciences, and the humanities. CEU also offers an extensive training program to meet the personnel needs of the coal mining industry. The program includes:

(1) A two-year associate degree in mining technology;
(2) A two-year associate degree in mine maintenance mechanics;
(3) A four-week pre-employment training program;
(4) A four-day orientation program;
(5) A series of classes to upgrade mine skills.

TABLE C-I

EXISTING PUBLIC PRIMARY AND SECONDARY SCHOOL
ENROLLMENT AND CAPACITIES

School	Location	Grades	Enrollment	Capacity*	Enrollment as Percent of Capacity
Carbon					
Sally Mauro	Helper	K-6	488	420	116.2
Price	Price	K-6	521	540	96.5
Reeves	Price	K-6	298	240	124.2
Durrant	Price	K-6	521	540	96.5
Castle Heights	Price	K-6	543	540	100.5
Wellington	Wellington	K-6	360	270	133.3
Peterson	East Carbon	K-6	333	300	111.1
Helper Jr.	Helper	7-9	231	325	71.1
Mont Harmon Fr.	Price	7-9	637	700	91.0
Carbon High	Price	10-12	731	1,000	73.1
East Carbon High	East Carbon	10-12	193	350	55.1
Ann Self	Spring Glen	Spec. Ed.	46	70	65.7
Emery					
Book Cliffs	Green River	K-6	172	300	57.3
Cleveland	Cleveland	K-6	282	300	94.0
Huntington	Huntington	K-6	517	550	94.0
Castle Dale	Castle Dale	K-6	408	400	102.0
Cottonwood	Orangeville	K-6	266	400	66.5
Ferron	Ferron	K-6	495	550	90.0
Canyon View Jr.	Huntington	7-9	256	350	73.1
San Rafael Jr.	Ferron	7-9	325	350	92.9
Green River High	Green River	7-12	128	350	36.6
Emery High	Castle Dale	10-12	473	600	78.8

*Figured at 30 students per classroom.

D. Housing

The following tabulations are taken from the Southeastern Utah Housing Element 1981 Update published by the Southeastern Utah Association of Local Governments in May 1981. An inventory of existent housing units in Southeastern Utah was completed by SEUALG in April of 1980. This inventory, conducted by field survey, collected data on the number and type (i.e. single family, multi-family, mobile home, etc.) of housing units available to the residents of the region. The surveyors attempted to cover all known concentrations of housing units within Carbon and Emery counties; however, isolated ranches and farms may not have been included in the inventory.

TABLE D-I

NUMBER OF DWELLING UNITS BY TYPE

	Conventional Housing	Mobile Homes	Multi-Family	Total
Carbon	5,032	889	352	6,273
Emery	1,978	997	77	3,052

TABLE D-II

PERCENTAGE OF DWELLING UNITS BY TYPE

	Conventional Housing	Mobile Homes	Multi-Family	Total
Carbon	80.2%	14.2%	5.6%	100%
Emery	64.8%	32.7%	2.5%	100%

TABLE D-III

HOUSING INVENTORY 1980 INCORPORATED AREAS	Price	Wellington	East Carbon	Sunnyside	Carbonville	East Price	Green River
I. TOTAL SINGLE FAMILY DWELLINGS	2360	283	638	147	501	193	368
Conventional Housing	2166	229	623	125	224	100	250
Mobile Homes On Single Lots	57	33	15	22	31	28	44
Mobile Homes Mobile Home Parks	137	21	-0-	-0-	246	65	74
II. TOTAL MULTI-FAMILY DWELLING UNITS	257	11	-0-	-0-	-0-	-0-	10
III. TOTAL MULTI-FAMILY DWELLING STRUCTURES	44	3	-0-	-0-	-0-	-0-	3
Duplexes	11	2	-0-	-0-	-0-	-0-	1
Three-Plexes	2	-0-	-0-	-0-	-0-	-0-	-0-
Four-Plexes	12	-0-	-0-	-0-	-0-	-0-	2
Six-Plexes	4	-0-	-0-	-0-	-0-	-0-	-0-
Eight-Plexes	11	-0-	-0-	-0-	-0-	-0-	-0-
Other	4	1	-0-	-0-	-0-	-0-	-0-
IV. STRUCTURE TOTALS (ALL DWELLINGS)	2404	286	638	147	501	193	371
V. UNIT TOTALS (ALL DWELLINGS)	2617	294	638	147	501	193	378

Source: Southeastern Utah Association of Governments Housing Inventory Survey, April 1980

E. Land Use

E.1. As previously noted, the geographic area designed in this study includes portions of Carbon and Emery counties. In total, the two counties encompass a land area of 5,915 square miles, or approximately 7.2 percent of Utah's total area. The two counties are characterized by a diverse topography ranging from high alpine peaks and plateaus to rolling desert valleys and deep river canyons.

Like many other areas of the western United States, much of the land in Carbon and Emery counties is owned and managed by the federal government. This ownership must be kept in mind as the single largest factor influencing land use patterns in the study area.

Since federally owned land is administered in conformance with national policy and legislation, land use within the two counties is often more of a reflection of national goals and objectives than of local development activities.

E.2. Agricultural Lands - Agricultural use, including grazing on public lands, constitutes the single largest land use category in the study area. This intensity of agricultural land use, however, varies greatly. Much of the U.S. Bureau of Land Management administered ground is, as one long-term rancher put it ". . . good for grazing one skinny cow per square mile." Only about 1.1 percent of the total land area is used for irrigated agriculture, primarily feed crops and pasturage. Most of the irrigated crop land is found in two areas: Price River Valley (Helper-Price, Wellington) in Carbon County, and the Green River area, in Emery County.

E.3. Urbanized Land - There are 5 incorporated communities in the two-county area, as well as several small unincorporated communities administered by the counties. Each of the communities has under the heading of "urbanized land" -- residential, commercial, industrial, churches, schools and other public lands and buildings. These users

in each of the counties constitute less than 1/10 of 1 percent of the total land area. The urbanized land is found in roughly the same two areas as irrigated agricultural land. Population density in the impacted counties is very low, 1.3 persons per acre. The land use control laws of Emery County require all growth to occur within corporate limits of municipalities. Carbon County's ordinances, though less strict, do attempt to promote growth in or near municipalities. The unincorporated areas between Helper and Price in Carbon County are exceptions to that rule. In these areas, development has occurred because sewer outfall lines and water lines have been built providing these services and spurring growth.

E.4. Industrial Lands - While extensive mining occurs in the region, most of it is of the underground type, which limits industrial land use in these instances to the immediate vicinity of the mine mouth or "portal". Due to the large amounts of federally owned ground in the two county area, many underground mining areas also have a different "surface" land use such as recreation or grazing.

Major industrial sites are located in only a few areas at the present time. Carbon County industrial sites include Utah Power and Light's Carbon Generating Plant at Castle Gate, and the Carbon County Industrial Park south of Price. In Emery County, major industrial sites are UP&L's generating facilities at Huntington and Castle Dale.

E.5. Recreation Land Use - Here again the large holdings of the federal government play a role in land use patterns in the two counties. If the so-called "multiple use" concept of federal land management is viewed in the broadest possible sense, virtually all of the 2.79 million acres of federally owned ground could be viewed as recreational land. Much of the land which is leased for mining or grazing is also open for general recreational use.

TABLE E-I

EXISTING LAND USE
(Acres)

Area	Irrigated Crop Land	Irrigated Pasture	Range Land	Urbanized Land	Industrial Land
Carbon County	8,604	3,438	890,000	3,700	1,000
Price River Valley	8,484	2,671	--	3,240	600
Emery County	27,997	27,254	2,782,176	3,000	2,300
Castle Valley	25,832	26,799	--	2,650	2,280
Green River[a]	2,165	455	--	350	20

[a]Total includes 400 acres of irrigated agricultural and urban lands in Green River area, which are situated in Grand County.

TABLE E-II

DESIGNATED RECREATIONAL LAND USE (ACRES)

Area	National Parks	State Parks
Carbon County	--	312
Emery County	1,734	2,931
TOTAL	1,734	3,243

F. Fire Protection

Fire protection needs in the counties are presently filled on a cooperative basis between the counties and municipal governments. Each county assists its municipalities in the purchase of major fire fighting equipment in return for which the municipalities are also responsible for providing fire station structures and for personnel training. Communities and dispatch is handled through the individual County Sheriff's office.

TABLE F-I
FIRE PROTECTION SERVICES

Area	No. Engines	Staff	Facilities	Fire Rating
Price	5	24 volunteers plus paid chief	1	6
Wellington	3	16 volunteers	1	6
East Carbon/Sunnyside	3	22 volunteers	1	7
Green River	3	25 volunteers	1	7

SECTION IV - HUMAN SERVICES PROVISION CAPACITY

Table presents a listing of the public agencies currently providing human services in the area to be impacted by South Lease development. This discussion is excerpted from Study of a Conceptual Nuclear Energy Center at Green River, Utah: Socioeconomic Impacts.*

*Rodger Weaver, Jeanine Taylor, Keith Burnett, Bob Greenberg, prepared for the Utah State Energy Office and the Oak Ridge National Laboratory of the U.S. Department of Energy, Salt Lake City, Utah, 1982.

Table 2.12

HUMAN SERVICE AGENCIES SERVING IMPACT AREA

Category	Agency	Functions	Authority
Public Safety	Carbon County Sheriff	Law enforcement, dispatch, civil and criminal paper service, jail, short-term juvenile detention	County
	Emery County Sheriff	Law enforcement, dispatch, jail, civil and criminal paper service	County
	Grand County Sheriff	Law enforcement, dispatch, jail, civil and criminal paper service	County
	Green River City Police	Law enforcement	City
	East Carbon City Police	Law enforcement, dispatch	City
	Wellington City Police	Law enforcement	City
	Price City Police	Law enforcement	City
Mental Health/ Substance Abuse	Four Corners Community Mental Health Center	Comprehensive mental health services: outpatient (individual, family and group), inpatient, consultation and education, partial hospitalization, residential care, 24-hour emergency care	Multi-county (District 7A plus San Juan County)
	Eastern Utah Alcoholism Treatment Center	Detoxification, residential treatment, outpatient therapy, after care, referral service	Private non-profit foundation
Public Health/ Family Planning	Planned Parenthood Association of Utah	Family planning services	Private non-profit foundation
	Southeastern Utah Health District	Personal health services, environmental health, home health, health education, nursing services, disease control, maternal/child health, screening	Multi-county (District 7A plus San Juan County)
Social Services	Southeastern Utah Social Services	Adoption, day care, developmentally disabled, pre- and post-sentence evaluation for drug and alcohol offenders, employment and rehabilitation, family violence, health related, home management, individual and family counseling, legal services, family planning, information and referral, material and financial assistance, protective services, substitute care	State (District 7A)

Table 2.12 - Continued

Category	Agency	Functions	Authority
Aging	Carbon County Senior Citizen Program	Socialization/recreation, nutrition, alternatives to institutionalization (The Alternatives Program)	County
	Emery County Senior Citizen Program	Socialization/recreation, nutrition, alternatives to institutionalization (The Alternatives Program)	County
	Grand County Senior Citizen Program	Socialization/recreation, nutrition, alternatives to institutionalization (The Alternatives Program)	County
	Area Agency on Aging	Homemaker, home health, assessment/ case management, administration and technical assistance to county programs	Multi-county (District 7A), Association of Local Governments
Courts	Adult Probation and Parole	Supervise adult parolees, probationers and diversion, pre-sentence reports	State (District 7A)
	Juvenile Court	Judicial, probation, Interstate Compact	State Board of Juvenile Court Judges (Multi-county District)
Developmentally Disabled/ Mentally Retarded	Castle Valley Workshop	Sheltered Workshop	Carbon County School District
Employment/ Job Placement and Training	Job Service	Employment services: placement, testing and counseling, unemployment insurance, manpower programs	State
	Utah State Office of Education, Division of Rehabilitation Services	Return individuals to gainful employment with physical, emotional or mental disabilities causing significant job handicaps	State Board of Education (District 7A plus San Juan County)

Table 2.12 - Continued

Category	Agency	Functions	Authority
Poverty	Carbon County Indigent Program	Emergency aid to transients, indigent burials, medical services, tax abatement	County
	Emery County Indigent Program	Emergency aid	County
	Grand County Indigent Program	Emergency aid	County
	Community Action Program	Crisis Intervention, Retired Senior Volunteer Program, Outreach, Weatherization, Headstart	Private, non-profit
Human Service Planning	Association of Local Gov'ts.	Human services planning and coordination for District 7A.	Multi-county (District 7A), Association of Local Gov'ts.

Current Workloads and Capacities: Several different measures of workload and capacity are currently in use by local human service agencies. Several agencies use a service worker to population ratio as their index of workload. Other agencies determine workload on the basis of units of service provided or numbers of clients served during a set period. In addition, the concept of static and dynamic service slots is also employed; where static slots represent the number of individuals that can be served at any given time, and dynamic slots represent the number of static slots times the average length of utilization. For many of the agencies serving the impact area, capacity is primarily viewed as a subjective variable based upon staff morale, burnout, and perceptions of how busy things are. Differing conceptualizations of workload lead in turn to various views of capacity.

Another complicating factor in analyzing capacity is the fact that different segments of a single agency may have different capacities. For example, clerical support in a city police department may already be operating at maximum capacity, while the jail facilities available to that department may be operating at only 50 percent capacity.

This discussion of workload and capacity relies on each agency's measures of these factors. In order to achieve some degree of comparability among data on the various agencies included in this study, workload and capacity have been shown in conjunction with a base population figure. In most cases, the population base listed corresponds to the total population of the area (city, county, or, multi-county) served by that agency. In a few cases more specific population breakouts have been made; for example, for county senior citizen programs, population bases are shown as the number of service area residents over 60 years old. While such detailed population analyses are certainly desirable for more accurate workload, capacity, and cost analysis, they are in most cases beyond the scope and resource base of the present study.

A highly complex web of eligibility criteria for specific services provided by various agencies has forced the use of the assumption that, in most cases, total service area populations are the most expeditious way to view the population base for each service.

At this time, available data is inadequate to specify a population base for county indigent programs. A substantial portion of these funds is used to provide emergency assistance to transients whose exact numbers are not known.

Table [illegible] presents workloads of impact area human service agencies.

Expenditures: An analysis of the expenditures on impact area human services presents several special problems. Data are not available on the unit cost of each service provided by each agency. In addition, units of service provided by various agencies are not directly comparable, for example an adoptive placement vs. a senior citizen congregate meal. For the purpose of this study the data have been aggregated to an agency/ expenditure basis to allow the calculation of each agency's expenditures per 1,000 service area residents.

WORKLOADS OF IMPACT AREA HUMAN SERVICE AGENCIES

Agency	Function/Service	Current Annual Workload	Population Base	Current Annual Workload Capacity/Current Workload as Percent of Capacity
Carbon County Sheriff	Jail	4,161 bed days (peak population 24)	22,101[b]	7,300 bed days/average 57% (with peaks over daily capacity)
	Dispatch	765,000 calls	22,101[b]	612,000 calls/125%
	Law enforcement	682 arrests	7,441[t]	Unknown
	Juvenile detention	380 juveniles detained	6,558[c]	Unknown
	Papers served	12,000 papers served	22,101[b]	Unknown
Emery County Sheriff	Jail	2,774 bed days	11,451[d]	17,520 bed days/average 16%
	Dispatch	Unknown	11,451[d]	Unknown
	Law enforcement	26,500 actions	10,494[u]	Unknown
	Paper service	4,400 papers served	11,451[d]	Unknown
Grand County Sheriff	Jail	2,261 bed days	8,312[e]	5,840 bed days/average 39%
	Dispatch	Unknown	8,312[e]	Unknown
	Law enforcement	1,669 actions	2,972[v]	Unknown
	Papers service	2,789 papers served	8,312[e]	Unknown
Moab City Police	Law enforcement	12,000 actions	5,340[f]	9,302 actions/129% (based upon officer/population ratio)
Price City Police	Law enforcement	6,480 complaints	9,407[g]	4,563 complaints/142% (based on officer/population ratio)
Green River City Police	Law enforcement	Unknown	1,065[h]	Unknown
East Carbon City Police	**Law enforcement, dispatch**	**1,300 Complaints**	**2,570**	**1285 complaints/101%(based on office/population ratio)**
Wellington City Police	**Law enforcement**	**forthcoming**	**1,406**	**703 complaints/forthcoming**

Table 2.13 - Continued

Agency	Function/Service	Current Annual Workload	Population Base	Current Annual Workload Capacity/Current Workload as Percent of Capacity
Four Corners Mental Health Center	Outpatient Psychotherapy	9,700 contacts	54,138[i]	11,023 contacts/88%
	Inpatient	120 bed days	54,138[i]	150 bed days/80%
	Consultation and education	5,200 contact hours	54,138[i]	5,200 contact hours/100%
	Partial hospitalization	3,000 contact days	3,220[j]	3,000 contact days/100%
	Residential	1,600 bed days	54,138[i]	1,798 bed days/89%
Eastern Utah Alcoholism Treatment Center	Detoxification	53 clients served	41,868[k]	53 clients/100%
	Residential change	34 clients served	41,868[k]	34 clients/100%
	Outpatient	Unknown	41,868[k]	Currently near capacity at current service levels
	After care	Unknown	41,868[k]	Currently near capacity at current service levels
	Referral	Unknown	41,868[k]	Currently near capacity at current service levels
Planned Parenthood Association of Utah	Physical exams	550 exams	16,051[l]	855 exams/50% Moab, 75% Price
	Pregnancy tests	300 tests	16,051[l]	492 tests/50% Moab, 75% Price
	Counseling	215 counseling sessions	41,868[k]	374 sessions/50% Moab, 75% Price
	Education	943 persons served	41,868[k]	1,471 persons/50% Moab, 75% Price

Table 2.13 - Continued

Agency	Function/Service	Current Annual Workload	Population Base	Current Annual Workload Capacity/Current Workload as Percent of Capacity
Southeastern Utah Social Services	Personal health	Unknown	54,138[i]	Unknown
	Environment	Unknown	54,138[i]	Unknown
	Health education	Unknown	54,138[i]	Unknown
	Nursing	Unknown	54,138[i]	Unknown
	Disease control	Unknown	54,138[i]	Unknown
	Maternal/child	6,314 persons served	54,138[i]	Unknown
	Screening	8,338 persons served	54,138[i]	Unknown
	Home health	Unknown	54,138[i]	Unknown
	Adoptions	12 children placed	41,868[k]	12 children/100%
	Day care	200 cases served (dynamic load)	41,868[k]	57 static slots
	Developmentally disabled/Mentally retarded	48 slots	41,868[k]	48 slots/100%
	Alcohol and Drug evaluations	200 evaluations	41,868[k]	200 evaluations/100%
	Employment placement and training for public assistance recipients	333 cases served	41,868[k]	375 dynamic capacity/89%
	Health related	625 individuals	41,868[k]	625 individuals/100%
	Home management	35 cases	41,868[k]	45 cases/78%
	Counseling	50 families served	41,868[k]	50 families/100%
	Legal services	125 cases served	41,868[k]	75 cases/167%
	Public assistance	4,800 individuals served	41,868[k]	4,800 individuals/100%
	Protective	320 static slots	41,868[k]	283 static/113%
	Substitute care	25 static slots	41,868[k]	30 static/83%
	Family violence	Unknown	41,868[k]	35 static counseling, 6 families in shelter/static

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Table 2.13 - Continued

Agency	Function/Service	Current Annual Workload	Population Base	Current Annual Workload Capacity/Current Workload as Percent of Capacity
Carbon County Aging	Socialization and recreation	93,807 units of service	2,624[m]	93,807 units/100%
	Nutrition	47,000 units of service	2,624[m]	47,000 units/100%
	The Alternatives Program	280 units of service	2,624[m]	280 units/100%
Emery County Aging	Social and recreation	23,545 units of service	1,360[n]	23,544 units/100%
	Nutrition	28,600 units of service	1,360[n]	28,600 units/100%
Grand County Aging	Social and recreation	6,435 units of service	987[o]	6,435 units/100%
	Nutrition	4,206 units of service	987[o]	4,206 units/100%
Area Agency on Aging	Homemaker	810 units of service	4,971[k]	Unknown
	Home health	168 units of service	4,971[k]	Unknown
	Assessments	54 units of service	4,971[k]	Unknown
	Case management	54 units of service	4,971[k]	Unknown
	Administration	Unknown	4,971[k]	Unknown
Adult Probation and Parole	Supervision	370 cases static load	54,138[i]	400 cases static/92%
Juvenile Court	Judicial	1,013 referrals 690 criminal intakes 345 court preparations	54,138[i]	2,000 criminal intakes or 480 court preparations or
	Probation supervision	83 juveniles on probation	54,138[i]	140 Juveniles on probation/16%

Table 2.13 - Continued

Agency	Function/Service	Current Annual Workload	Population Base	Current Annual Workload Capacity/Current Workload as Percent of Capacity
Castle Valley Workshop	Sheltered workshop	32 clients served	33,556[q]	Unknown
Moab Handicapped, Inc.		10 clients served	8,312[e]	Unknown
Job Service	Employment services	5,650 new applicants	44,556[r]	5,650 new applicants/100%
Vocations Rehabilitation	Vocational rehabilitation	841 cases processes	41,868[k]	942 cases/91% Facility and support services now at 100% capacity
Carbon County Indigent Program	Transient service	160 singles and couples, 36 families served	Unknown	Unknown
	Indigent burials	Unknown	Unknown	Unknown
	Medical assistance	20 cases served	Unknown	Unknown
	Tax abatement	40 cases served	Unknown	Unknown
Grand County Indigent Program	Emergency assistance	Unknown	Unknown	Unknown
Emery County Indigent Program	Emergency assistance	Unknown	Unknown	Unknown
Community Action Program	Crisis Intervention	610 clients	33,556[q]	Unknown
	Retired Senior Volunteer Program	Unknown	33,556[q]	Unknown
	Outreach	1,125 contacts	33,556[q]	Unknown
	Weatherization	115 homes completed	41,868[k]	Unknown
	Headstart	118 children enrolled	41,868[k]	Unknown

Table 2.13 - Continued

Agency	Function/Service	Current Annual Workload	Population Base	Current Annual Workload Capacity/Current Workload as Percent of Capacity
Human Service Planner/SEUALG	Planning and coordinating District 7A human services	Unknown	41,868[k]	Unknown

Footnotes:
[a]Actions are defined as offences and incidents, plus traffic stops.
[b]Total Carbon County population.
[c]Number of Carbon County juveniles under age 18.
[d]Total Emery County population.
[e]Total Grand County population.
[f]Total Moab City population.
[g]Total Price City population.
[h]Total Green River City population.
[i]Total population Carbon, Emery, Grand, and San Juan Counties.
[j]Carbon, Emery, Grand and San Juan population over 18 years old.
[k]Total population Carbon, Emery and Grand Counties.
[l]Total women childbearing years Carbon, Emery, and Grand Counties.
[m]Carbon County population over 60 years old.
[n]Emery County population over 60 years old.
[o]Grand County population over 60 years old.
[p]Population over 60 years old Carbon, Emery, and Grand Counties.
[q]Total population Carbon and Emery Counties.
[r]Total population Carbon, Emery, Grand, and North San Juan Counties.
[s]Population between ages 12-15 in Carbon, Emery, Grand, and San Juan Counties.
[t]Total Carbon County population less population of cities with own police forces.
[u]Total Emery County population less population of cities with own police forces.
[v]Total Grand County population outside Moab City.

Table 2.14 presents the total expenditures (current costs plus capital costs) for each agency for FY81. The expenditure per 1,000 base population was calculated by dividing each agency's total budget for FY81 by the total population served by that agency as reported in Table 2.13. In those cases where an agency serves more than one identified base population, the population base receiving that agency's primary service was used. For example, Table 2.13 shows the Carbon County Sheriff's Department serving either 22,101 (jail, dispatch, paper services), 7,441 (law enforcement), or 6,588 (juvenile detention) persons. In calculating the expenditure per 1,000 base population for that agency, the population base of 7,441 was used. This represents those persons receiving that agency's primary service: law enforcement. This method has the effect of somewhat overstating the reported expenditure per capita for the Carbon and Grand County Sheriffs, and to a smaller extent those of the Emery County Sheriff, since those agencies have the widest disparities between the various populations they serve. In addition, the County Sheriff's dispatch operations in all three counties also dispatch for other agencies including the Utah Highway Patrol, other social services and fire. Jails operated by the three County Sheriffs also serve the City Police Departments and on some occasions house state and federal prisoners. In addition, the vast distances patrolled, low population densities and lack of City Police Departments in all but the area's largest cities, all contribute to the high expenses of County Sheriffs in the impact area.

The figures for each agency reported in Table 2.14 represent actual expenditures in FY81. For agencies which rely on the state for personnel, financial management, and planning services, these expenditures are understated. For other agencies these figures are fully loaded with all administrative and indirect expenses.

Table 2.14

EXPENDITURES ON HUMAN SERVICES IN IMPACT AREA
(FY 1981)

Agency	Total Cost	Cost/1000 base population[a]	Percent Federal Funds	Percent State Funds	Percent County Funds[b]	Percent City Funds[b]
Carbon County Sheriff	$ 909,525	$ 41,150	0	0	100	
Emery County Sheriff	1,250,000	109,160	0	0	100	
Grand County Sheriff	330,220	39,730	0	0	100	
East Carbon City Police	160,000	62,256	0	0	0	100
Wellington City Police	34,825	24,769	0	0	0	100
Price City Police	416,400	44,260	0	0	0	100
Green River City Police	37,764	35,460	0	0	0	100
Four Corners Community Mental Health Center	1,178,000	21,760	18	58	6	0
Eastern Utah Alcoholism Treatment Center	73,767	1,760	0	23	16	0
Planned Parenthood Association of Utah	100,000	2,390	47	1	1	0
Southeastern Utah Health District	865,873	15,990	44	35	18	0
Southeastern Utah Social Services	1,126,042	26,900	57	43	0.3	0
Carbon County Aging	279,680	106,000	33	10	39	
Emery County Aging	132,646	97,530	33	10	39	
Grand County Aging	43,884	44,462	33	10	39	
Area Agency on Aging	13,545	2,725	33	10	39	
Adult Probation and Parole	146,000	2,697	0	100	0	0

Table 2.14 - Continued

Agency	Total Cost	Cost/1000 base population[a]	Percent Federal Funds	Percent State Funds	Percent County Funds[b]	Percent City Funds[b]
Juvenile Court	$ 267,034	$ 4,932	0	100	0	0
Castle Valley Workshop	73,000	2,175	46	15	0	0
Job Service	470,000	10,549	100	0	0	0
Vocational Rehabilitation	300,000	7,165	75	25	0	0
Carbon County Indigent Program	5,200	Unknown	0	0	100	0
Emery County Indigent Program	3,000	Unknown	0	0	100	0
Grand County Indigent Program	1,000	Unknown	0	0	100	0
Community Action Program						
Crisis Intervention	22,384	667	100	0	0	0
R.S.V.P.	53,962	1,608	65	0	35	0
Outreach	24,844	740	na			
Weatherization	160,600	3,836	100	0	0	0
Headstart	223,256	5,332	80	0	20	0
Human Services Planning/SEUALG	22,000	4,119	85	0	15	0

[a]Figures for Community Action Program are broken out by program due to different population bases for each program.

[b]County and City funds include Federal Revenue Sharing monies used for capital expenses in law enforcement agencies.

Sources: Total Costs--Key Informant Survey
Percent Federal, State, County and City Funds, FY81--
District 7A, Human Service Budgets and
Key Informant Survey.

Chapter Two

ECONOMIC AND DEMOGRAPHIC IMPACT PROJECTIONS

The central component of the analysis of the socioeconomic impacts of the South Lease development is the projection of potential economic and demographic impacts. Other components of the analysis were derived from these projections as summarized in this chapter. The economic and demographic impact projections were produced using the same models---UPED and SAM---as were used to produce the Baseline projections introduced in Chapter One.

Four different scenarios were specified and their impacts projected:

> Case 1: Development of the South Lease Property to the production (and employment) level set out in Kaiser's Permit Application and represents what Kaiser views as optimal development. Commuting patterns of the South Lease construction and operations work force were developed in consultation with local area planners and represent a "most likely" pattern of residences for these workers.
>
> Case 2: Development proceeds more slowly than in Case 1 but reaches the same level several years later. The same commuting patterns are assumed as in Case 1.
>
> Case 1--Green River Augmentation: The same development schedule is assumed as in Case 1, but a greater proportion of the South Lease work force is assumed to live in Green River City.
>
> Case 2--Green River Augmentation: The same development schedule is assumed as in Case 2, but a greater proportion of the South Lease work force is assumed to live in Green River City.

The Green River Augmentation scenarios were specified is recognition of the facts that: (1) a number of unemployed uranium miners now live in Green River and may secure an unusually high number of South Lease jobs, and (2) Green River City has adequate community infrastructure to accomodate these workers.

Section I, below, summarizes the South Lease direct employment and commuting patterns assumptions upon which the analysis is based. Section II summarizes the economic and demographic projections themselves. Detailed computer printout tabulations of the projections have been provided to all interested parties.

I. Employment and Commuting Projections

presents the employment and commuting assumptions for each scenario.

South Lease Case 1

South Lease mine development is assumed to begin in 1983 with 50 mine construction workers that year and the next. Construction work is assumed to be completed and operations to begin phasing in in 1985. Full scale operations employment of 475 workers is assumed to be reached in 1990 and to remain constant at that level through the year 2000.

Commuting assumptions were developed in recognition that the phase-out of part of the existing mining in the area would produce a work force available for employment at the South Lease Mine. In each year, ninety percent of the phased-out miners living in the East Carbon - Sunnyside (EC-S) CCD were assumed to take South Lease jobs up to the point where either the number of EC-S phased-out miners or the number of South Lease jobs was exhausted. These workers were assumed to continue to reside in the EC-S CCD. The balance of the South Lease jobs (if any) would be taken by in-migrants. The commuting pattern for the in-migrants was

Table 2-1

SOUTH LEASE ALTERNATIVE DEVELOPMENT SCENARIOS
--DIRECT EMPLOYMENT AND COMMUTING PATTERNS--

	1983	1984	1985	1986	1987	1989	1990	1991-2000
Case 1								
Construction*	50	50	25	-	-	-	-	-
Operations*	-	-	31	112	206	300	450	475
Total*	50	50	56	112	206	300	450	475
South Lease Employees Living in:								
Price CCD	17	17	17	17	59	104	198	214
East Carbon CCD	32	32	38	91	143	190	241	249
Green River CCD	1	1	1	1	3	6	11	12
Green River Augmentation in Green River CCD	17	17	17	17	56	65	65	65

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994-2000
Case 2												
Construction*	50	50	25	-	-	-	-	-	-	-	-	-
Operations*	-	-	25	75	112	162	225	280	340	400	440	475
Total*	50	50	50	75	112	162	225	280	340	400	440	475
South Lease Employees Living in:												
Price CCD	17	17	17	17	17	17	57	91	129	167	192	214
East Carbon CCD	32	32	32	57	94	144	165	184	204	224	237	249
Green River CCD	1	1	1	1	1	1	3	5	7	10	11	12
Green River Augmentation in Green River CCD	17	17	17	17	17	17	53	65	65	65	65	65

*Annualized full time equivalents prepared from quarterly employment data provided by Kaiser Steel Corporation.

determined by the application of a gravity model to the Price, EC-S, and Green River CCD's. At full operation, forty-five percent of the South Lease employees are assumed to live in the Price CCD while fifty-two percent and three percent are assumed to live in the EC-S and Green River CCD's, respectively.

Trade patterns within the impacted areas are assumed to be basically the same as those existing at present and continued in the Baseline projection. Thus, the Price CCD continues to serve as the major trade and service center for all three CCD's and to receive a share of residentiary employment substantially in excess of its proportion of direct South Lease employees' residences.

South Lease Case 2

South Lease development stage employment and ~~scale~~ final operations employment level assumptions are the same as those in Case 1; however, the period of phase in to full operation is longer, with that level not reached in Case 2 until 1994.

Commuting and trade patterns assumptions are the same as those in Case 1.

At the July 26, 1982, meeting of Kaiser Steel Corporation, Weaver Associates, and interested Federal, State of Utah, Southeastern Utah Association of Local Governments, Carbon and Emery Counties, and Green River City personnel, it was decided that analysis of a second scenario for both Case 1 and 2 should be undertaken. The second scenarios would complement the original analyses and would be considered as potential alternatives to the first rather than replacing the original projections of the impacts of South

Lease development. These second scenarios, titled Case 1: Green River Augmentation, and Case 2: Green River Augmentation, respectively, have been produced.

The concern raised at the July 26 meeting was the possibility that, due to its current high unemployment rate, which results primarily from the recent, but probably permanent, decline in the uranium industry, and which is projected to remain high in the Baseline, residents of Green River City may take a larger proportion of the South Lease direct construction and operations employment than is indicated in the original projections. It was suggested that this consideration may lead to a sufficient number of South Lease employees from Green River City to require an additional 100 households in that city. Green River City has adequate infrastructure to accomodate such an additional number of residents. To accomplish this augmentation, the commuting assumptions were modified such that, at permanent South Lease operations level, 14 percent of the workforce resides in Green River. This compares with only three percent in the original scenarios. There were, of course, corresponding reductions in the percentages residing in the Price and East Carbon-Sunnyside CCD's, to 38 and 48 percent respectively.

II. Economic and Demographic Impacts of South Lease Development

Tables 2-2-2-5 summarizes the economic and demographic impacts of South Lease development based upon the assumptions set out in Section I, above. These projections are presented at the county, Census County Division (CCD) and community levels. The allocations from the CCD to the community level was performed by the Southeastern Utah Assocation of Local Governments. Detailed computer printout tabulations of these projections have been provided to interested parties.

The following chapters present analyses of the public service, public expenditure, and local revenue impacts of the economic and demographic impacts summarized above.

Table 2-2

CASE 1

Summary of Economic and Demographic
Impacts by County
(Addition to Baseline)

CARBON COUNTY

Year	Population	Employment		Households	School-Age Population
		Total	Basic		
1983	119	21	0	39	22
1985	175	32	0	58	30
1987	557	102	0	188	100
1989	1349	254	0	441	266
1991	1828	350	0	563	400
1995	2150	420	0	631	573
2000	2269	458	0	647	663

EMERY COUNTY

Year	Population	Employment		Households	School-Age Population
		Total	Basic		
1983	2	50	50	1	0
1985	3	57	56	1	0
1987	8	207	206	3	1
1989	30	455	450	10	6
1991	40	481	475	12	9
1995	46	482	475	13	12
2000	48	483	475	14	14

Table 2-3

Case 1

Summary of Economic and Demographic Impacts by CCD
(Addition to Baseline)

PRICE CCD

Year	Population	Employment Total	Employment Basic	Households	School-Age Population
1983	55	15	0	18	10
1985	81	23	0	27	14
1987	240	72	0	81	43
1989	770	198	0	252	152
1991	1106	278	0	341	242
1995	1339	336	0	393	357
2000	1428	366	0	407	417

EAST CARBON CCD

Year	Population	Employment Total	Employment Basic	Households	School-Age Population
1983	64	6	0	21	12
1985	94	9	0	31	16
1987	317	30	0	107	57
1989	579	56	0	189	114
1991	722	72	0	222	158
1995	811	84	0	238	216
2000	841	92	0	240	246

GREEN RIVER CCD

Year	Population	Employment Total	Employment Basic	Households	School-Age Population
1983	2	50	50	1	0
1985	3	57	56	1	0
1987	8	207	206	3	1
1989	30	455	450	10	6
1991	40	481	475	12	9
1995	46	482	475	13	12
2000	48	483	475	14	14

Table 2-4

Case 1

Summary of Economic and Demographic
Impacts by Community
(Addition to Baseline)

PRICE

Year	Population	Households	School-Age Population
1983	34	11	6
1985	51	17	9
1987	149	50	27
1989	480	157	95
1991	693	214	152
1995	841	247	224
2000	899	256	263

WELLINGTON

Year	Population	Households	School-Age Population
1983	6	3	1
1985	8	4	1
1987	24	8	4
1989	79	26	16
1991	116	36	25
1995	145	43	39
2000	158	45	46

EAST CARBON

Year	Population	Households	School-Age Population
1983	48	16	9
1985	71	23	12
1987	240	81	43
1989	438	143	86
1991	546	169	119
1995	613	178	164
2000	636	181	186

Table 2-4
(Continued)

SUNNYSIDE

Year	Population	Households	School-Age Population
1983	16	5	3
1985	23	8	4
1987	77	26	14
1989	141	46	28
1991	176	54	39
1995	198	58	53
2000	205	58	60

GREEN RIVER

Year	Population	Households	School-Age Population
1983	2	1	0
1985	3	1	1
1987	7	2	1
1989	26	9	5
1991	34	10	7
1995	39	11	10
2000	41	12	12

Table 2-5

Case 1
Green River Augmentation
Summary of Economic and Demographic Impacts
(Addition to Baseline)

GREEN RIVER CCD

Year	Population	Employment Total	Employment Basic	Households	School-Age Population
1983	35	54	50	12	6
1985	44	62	56	15	8
1987	132	223	206	45	24
1989	170	472	450	56	34
1991	208	503	475	64	46
1995	236	508	475	69	63
2000	246	510	475	70	72

GREEN RIVER CITY

Year	Population	Households	School-Age Population
1983	30	10	5
1985	38	13	7
1987	113	38	20
1989	146	48	29
1991	178	55	39
1995	202	59	54
2000	211	60	62

Chapter Three

SERVICE REQUIREMENT AND PUBLIC EXPENDITURE IMPACT ANALYSIS

I. Service Requirement Impacts

Analysis in this and the following chapter is limited to the Case 1 scenario only. This is in recognition of the fact that the total impact of Case 2 is very similar to that of Case 1, but occurs late in the time. Thus, little additional useful information would be generated by a detailed analysis of Case 2. Also, analysis of the Green River Augmentation alternative is limited to Green River itself. A single proportional reduction of Carbon County impacts would be expected if the Green River Augmentation scenario actually develops.

Tables 3-2 through 3-9 present the service requirement impact projections derived from the economic and demographic impact projections provided in Chapter Two. Most of these requirement projections are based upon the current "Community Facility Guidelines" set out by the State of Utah's Division of Community and Economic Development. The remainder were developed from adequacy standards recommended in the Green River Nuclear Energy Center Socioeconomic Impacts report. The standards were assumed to incorporate threshhold levels of economic and demographic impact below which no service requirements impacts would be imposed and above which such requirements would be imposed at levels indicated by the standard. Notice that the requirements of the constituant communities (Price, Wellington, East Carbon and Sunnyside) total a lower figure than the total requirements for Carbon County, and similarly for Green River and Emery County. This reflects the facts that: (1) a portion of the county's

impact is distributed into the unincorporated part of the county and (2) very small impacts are distributed into other communities in the two counties. Specific policies will have to be developed by the counties to select the specific locations of facilities to serve total county impact populations most effectively, both those people living in identified communities and those living elsewhere in the counties. The public expenditure projections presented later in this chapter identify the expenditure requirements imposed by impact residents in the identified communities, but the location of facilities to provide services to these residents remains a matter for policy decision.

II. Cost of Housing Impact

The cost of constructing the additional housing to be required by the impact population was calculated by assuming historical construction costs in the two counties would not change. The purchase price of mobile homes was determined by a survey of vendors. The total cost of impact housing provision is summarized in Table 3-1.

Table 3-1

CASE 1: COST OF IMPACT HOUSING REQUIREMENTS
(Thousands of 1981 Dollars)

	1983	1984-1985	1986-1987	1988-1989	1990-1991	1992-1995	1996-2000	Total
Carbon County	1707	807	5680	11,120	5331	2934	5970	33,549
Price	487	248	1432	4672	2506	1432	385	11,162
Wellington	101	37	211	771	450	312	73	1,955
East Carbon*	698	312	2514	2717	1119	385	138	7,883
Sunnyside*	211	138	771	872	377	146	0	2,515
Emery County	34	0	96	265	96	34	62	587
Green River	34	0	62	265	34	34	34	463
Total	1741	807	5776	11,385	5427	2968	6032	34,136
Green River Augmentation								
Green River	443	102	1043	395	293	164	34	2,474

*The Baseline projection shows a projected decling of 164 households in the East Carbon-Sunnyside area. Use of the dwelling units vacated by this decling could reduce impact housing costs in these areas by about 68 percent.

III. Impacts on Local Governmental Expenditure Requirements

This section briefly decribes the methods by which local governmental expenditure requirements were projected. For convenience, the actual expenditure projections are presented in Chapter Four where they are compared with revenue impact projections.

Governmental expenditures impacts were divided into two categories: capital expenditures and operating expenditures. Capital expenditure impacts were developed by costing out the capital facilities requirements presented in Section I of this chapter. Two alternative methods of projecting operating expenditure impacts were employed. The first method was the same as that used for capital facilities; i.e., costing of the service impacts presented

in Section I. The second method consisted of deriving the average operating expenditures per capita in 1979-1981 for each of the jurisdictions considered and applying this average expenditure figure to the impact population projections appearing in Chapter Two. To the extent that historical expenditure patterns represent conditions of excess capacity in any of the services provided or that economies of scale are available in the provision of such services, the per capita method will tend to overestimate actual expenditure impacts. The per capita method figures are presented as the upper limit beyond which local government expenditure impacts cannot reasonably be expected to climb.

Subsections A and B summarize the methods used to cost out the impacts derived from service requirements standards impacts. Subsection A addresses capital expenditures and Subsection B addresses operating expenditures. Again, the actual projections are summarized in Chapter Four.

A. Capital Expenditures Impact Projection Methodology

1. School Systems

Two categories of capital cost requirements (busses and buildings were projected for the Carbon and Emery County School systems. In addition, community level projections were produced as an indication of locations of demand in the communities. School District policy would, of course, have to determine the actual location of facilities construction.

> School Busses: This estimate was produced by multiplying the number of school busses required by the $50,000 1981 unit purchase price. Costs were calculated on an annual basis based on the number of additional busses needed each year.

School Buildings: Building cost projections were produced annually by costing yearly square footage increment derived from the material in Section I at the $64 per square foot cost estimated in 1981 by the Utah State Office of Education. School District policy would probably favor building the required additional space in one or two projects rather than on the biennial schedule presented in Chapter Four. Also, it must be emphasized that the capital expenditure impacts projected could be partially offset by either existing excess capacity such as at East Carbon High, and in both Green River schools or by a future reduction in utilization of existing capacity resulting from the population decline projected for the East Carbon CCD in the Baseline. This latter could result in a reduction in enrollment of around 15 percent and reduce additional capacity requirements in Carbon County by approximately 10 percent of the impact figures shown.

2. Libraries

Two categories of libraries capital costs were considered: books and buildings.

Books: Annual book expenditure impacts were projected by multiplying the number of additional books required by an average price per book of six dollars.

Buildings: Since only a relatively small amount of additional library building space would be required as a South Lease development impact, only a total, rather than annual expenditure projections was produced. These figures are based on the assumption that library construction costs are the same as school construction costs. Thus, the projections were produced by multiplying number of square feet required by $64/square foot.

3. Other Capital Costs

No capital costs projections were produced for the other categories of physical facilities identified in Section I. Health care facilities are the responsibility of the private sector and the size of the impact is very small, probably not requiring construction of additional

facilities. As indicated in Chapter One, sewer and water system capacities are probably adequate for population of the size to be expected with South Lease development and hence capital facilities expansion in these services will not be required.(Note: Sewer and water hookup costs are included as part of the housing cost estimates presented in Section II of this chapter.)

B. Operating Expenditures Impacts Standards Methodology

Operating cost estimates were produced for three categories of local government public service provision: law enforcement, human services, and education.

Law Enforcement: Law enforcement operating expenditure impacts were projected by applying per capita expenditure estimates developed in the Green River Nuclear Center Socioeconomic Impacts report to the affected jurisdictions' population impacts. These figures(adjusted to 1981 price levels) were $60 per capita for the Carbon County Sheriff's Office and $84 for city police forces.

Human Services: Operating expenditure impacts were estimated by multiplying the cost per sanitarian and social worker by the number of such workers required. The cost figures consist of an average salary estimate provided by the Utah Department of Social Services of $20,800 per year plus an additional 15% for fringe benefits and support for a total cost per worker of $23,920.

Education: Operating expenditure impact estimates for the school districts were based on average daily attendance(ADA) impacts derived from the school age population impacts presented in Chapter Two. ADA in 1980 was 86 percent of eligible (5-17 years old) population in Carbon County and 90 percent in Emery County. These percentages were assumed to hold for the South Lease impact population in the two counties. Non capital expenditure per student during the 1979-1981 period(inflated to 1981 price levels) averaged $2,268 for Carbon County schools and $2,498 for Emery County schools. These figures were also assumed to remain constant throughout the projection period.

Other categories of expenditure impacts based on the standards method were not produced because the specific impacts would be too small to generate significant impacts.

Table 3-2

Case 1

Community Facility Impacts

CARBON COUNTY

	1983	1985	1987	1989	1991	1995	2000
HOUSING - TOTAL	39	58	188	441	563	631	647
Single Family(60%)	23	35	113	265	338	379	388
Multi Family(15%)	6	9	28	66	84	95	97
Mobile Homes(25%)	10	14	47	110	141	158	162
EDUCATION							
Teachers(1 per 25 students)	1	1	4	11	16	23	27
Classrooms(1 per 25 students)	1	1	4	11	16	23	27
Guidance Counselors(1 per 300 students)	-	-	-	1	1	2	2
School Buses(1 per 85 students)	-	-	1	3	5	7	8
Schools - Grades 1-8(100 sq ft per student)	1600	2200	7500	19,900	30,000	43,000	49,700
High Schools(164 sq ft per student)	984	1312	4100	10,988	16,400	23,452	27,224
Special Ed. Services(1 per 12 pupils)	2	3	8	22	33	48	55
HEALTH CARE							
Acute Care(2 beds per 1000 population)	-	-	2	2	4	4	4
Physicians(1 per 1800 population)	-	-	-	1	1	1	1
Dentists(1 per 2000 population)	-	-	-	1	1	1	1
Registered Nurses(1 per 600 population)	-	-	1	2	3	4	4
*Sanitarians(.5 per 1000 population)	-	-	-	1	1	1	1
SOCIAL SERVICES							
*Mental Health Center(.55 per 1000 population)	-	-	-	1	1	1	1
*Psychiatric Beds(.46 per 1000 population)	-	-	-	1	1	1	1
*Social Service Worker(1 per 1000 population)	-	-	1	1	2	2	2
LAW ENFORCEMENT							
Policemen(2 per 1000 population)	-	-	2	2	4	4	4
Patrol Car(1 per patrolman)	-	-	2	2	4	4	4
Jail Space(500 sq ft per 1000 population)	-	-	500	500	1000	1000	1000

Table 3-2
(Continued)

	1983	1985	1987	1989	1991	1995	2000
FIRE PROTECTION							
Fire Flow (Varies)(Gallons per minute)	-	-	1000	1250	1500	1500	1500
Duration (Hours)	-	-	4	5	6	6	6
LIBRARIES							
Books(2 per person)	238	350	1114	2698	3656	4300	4538
Library Space(.5 sq ft per person)	59.5	87.5	278.5	674.5	914.	1075.	1134.5
SEWER							
(100 gallons per person per day)	11,900	17,500	55,700	134,900	182,800	215,000	226,900
WATER							
Water Rights(800 gallons per connection per day)	31,200	46,400	150,400	352,800	450,400	504,800	517,600
Water Supply(.0008 acre ft per person per day)	.0952	.1400	.4456	1.0792	1.4624	1.7200	1.8152
Source Production(1.11 gallons per minute per connection)	43.29	64.38	208.68	489.51	624.93	700.41	718.17
Water Treatment(1600 gallons per connection per day)	62,400	92,800	300,800	705,600	900,800	1,009,600	1,035,200
PARKS AND RECREATION							
(6 acres per 1000 population)	-	-	6	6	12	12	12

*No official state standards; standards excerpted from Study of a Conceptual Nuclear Energy Center at Green River, Utah: Socioeconomic Impacts, Salt Lake City, Utah, 1982.

Table 3-3

Case 1

Community Facility Impacts

EMERY COUNTY

	1983	1985	1987	1989	1991	1995	2000
HOUSING - TOTAL	1	1	3	10	12	13	14
Single Family(60%)	1	1	2	6	7	8	8
Multi Family(15%)	0	0	0	2	2	2	2
Mobile Homes(25%)	0	0	1	2	3	3	4
EDUCATION							
Teachers(1 per 25 students)	-	-	-	-	-	-	1
Classrooms(1 per 25 students)	-	-	-	-	-	-	1
Guidance Counselors(1 per 300 students)	-	-	-	-	-	-	-
School Buses(1 per 85 students)	-	-	-	-	-	-	-
Schools - Grades 1-8(100 sq ft per student)	-	-	-	-	-	-	1000
High Schools(164 sq ft per student)	-	-	-	-	-	-	656
Special Ed.Services(1 per 12 pupils)	-	-	-	1	1	1	1
LIBRARIES							
Books(2 per person)	4	6	16	60	80	92	96
Library Space(.5 sq ft per person)	1	2	4	15	20	23	24
SEWER							
(100 gallons per person per day)	200	300	800	3000	4000	4600	4800
WATER							
Water Rights(800 gallons per connection per day)	800	800	2400	8000	9600	10,400	11,200
Water Supply(.0008 acre ft per person per day)	.0016	.0024	.0064	.0240	.0320	.0368	.0384
Source Production(1.11 gallons per minute per connection)	1.11	1.11	3.33	11.10	13.32	14.43	15.54
Water Treatment(1600 gallons per connection per day)	1600	1600	4800	16,000	19,200	20,800	22,400

Table 3-4

Case 1

Community Facility Impacts

PRICE CITY

	1983	1985	1987	1989	1991	1995	2000
HOUSING - TOTAL	11	17	50	157	214	247	256
Single Family(60%)	6	10	30	94	128	148	154
Multi Family(15%)	2	3	8	24	32	37	38
Mobile Homes(25%)	3	4	12	39	54	62	64
EDUCATION							
Teachers(1 per 25 students)	-	-	1	4	6	9	11
Classrooms(1 per 25 students)	-	-	1	4	6	9	11
Guidance Counselors(1 per 300 students)	-	-	-	-	1	1	1
School Buses(1 per 85 students)	-	-	-	1	2	3	3
Schools - Grades 1-8(100 sq ft per student)	-	-	2100	7100	11,400	16,800	19,700
High Schools(164 sq ft per student)	-	-	984	3936	6,237	9184	10,824
Special Ed. Services(1 per 12 pupils)	1	1	2	8	13	19	22
HEALTH CARE							
Acute Care(2 beds per 1000 population)	-	-	-	-	2	2	2
Physicians(1 per 1800 population)	-	-	-	-	-	-	-
Dentists(1 per 2000 population)	-	-	-	-	-	-	-
Registered Nurses(1 per 600 population)	-	-	-	1	1	1	1
*Sanitarians(.5 per 1000 population)	-	-	-	-	-	-	-
SOCIAL SERVICES							
*Mental Health Center(.55 per 1000 population)	-	-	-	-	-	-	-
*Psychiatric Beds(.46 per 1000 population)	-	-	-	-	-	-	-
*Social Service Worker(1 per 1000 population)	-	-	-	-	1	1	1
LAW ENFORCEMENT							
Policemen(2 per 1000 population)	-	-	-	-	2	2	2
Patrol Car(1 per patrolman)	-	-	-	-	2	2	2
Jail Space(500 sq ft per 1000 population)	-	-	-	-	500	500	500

Table 3-4
(Continued)

	1983	1985	1987	1989	1991	1995	2000
FIRE PROTECTION							
Fire Flow (Varies) (Gallons per minute)	-	-	-	-	1000	1000	1000
Duration (Hours)	-	-	-	-	4	4	4
LIBRARIES							
Books (2 per person)	68	102	298	960	1386	1682	1798
Library Space (.5 sq ft per person)	17	26	75	240	347	421	450
SEWER							
(100 gallons per person per day)	3400	5100	14,900	48,000	69,300	84,100	89,900
WATER							
Water Rights (800 gallons per connection per day)	8800	13,600	40,000	125,600	171,200	197,600	204,800
Water Supply (.0008 acre ft per person per day)	.0272	.0408	.1192	.3840	.5544	.6728	.7192
Source Production (1.11 gallons per minute per connection)	12.21	18.87	55.50	174.27	237.54	274.17	284.16
Water Treatment (1600 gallons per connection per day)	17,600	27,200	80,000	251,200	342,400	395,200	409,600
PARKS AND RECREATION							
(6 acres per 1000 population)	-	-	-	-	6	6	6

*No official state standards; standards excerpted from Study of a Conceptual Nuclear Energy Center at Green River, Utah: Socioeconomic Impacts, Salt Lake City, Utah, 1982.

Table 3-5

Case 1

Community Facility Impacts

WELLINGTON CITY

	1983	1985	1987	1989	1991	1995	2000
HOUSING - TOTAL	2	3	8	26	36	43	45
Single Family(60%)	1	2	5	16	22	26	27
Multi Family(15%)	0	0	1	4	5	6	7
Mobile Homes(25%)	1	1	2	6	9	11	11
EDUCATION							
Teachers(1 per 25 students)	-	-	-	1	1	2	2
Classrooms(1 per 25 students)	-	-	-	1	1	2	2
Guidance Counselors(1 per 300 students)	-	-	-	-	-	-	-
School Buses(1 per 85 students)	-	-	-	-	-	-	1
Schools - Grades 1-8(100 sq ft per student)	-	-	-	1200	1900	2900	3100
High Schools(164 sq ft per student)	-	-	-	656	984	1640	2460
Special Ed.Services(1 per 12 pupils)	-	-	-	1	2	3	4
LIBRARIES							
Books(2 per person)	12	16	48	158	232	290	316
Library Space(.5 sq ft per person)	3	4	12	40	58	73	79
SEWER							
(100 gallons per person per day)	600	800	2400	7900	11,600	14,500	15,800
WATER							
Water Rights(800 gallons per connection per day)	1600	2400	6400	20,800	28,800	34,400	36,000
Water Supply(.0008 acre ft per person per day)	.0048	.0064	.0192	.0632	.0928	.1160	.1264
Source Production(1.11 gallons per minute per connection)	2.22	3.33	8.88	28.86	39.96	47.73	49.95
Water Treatment(1600 gallons per connection per day)	3200	4800	12,800	41,600	57,600	68,800	72,000

Table 3-6

Case 1

Community Facility Impacts

EAST CARBON CITY

	1983	1985	1987	1989	1991	1995	2000
HOUSING - TOTAL	16	23	81	143	169	178	181
Single Family(60%)	10	14	49	86	102	107	109
Multi Family(15%)	2	3	12	21	25	27	27
Mobile Homes(25%)	4	6	20	36	42	44	45
EDUCATION							
Teachers(1 per 25 students)	-	-	2	3	5	7	7
Classrooms(1 per 25 students)	-	-	2	3	5	7	7
Guidance Counselors(1 per 300 students)	-	-	-	-	-	1	1
School Buses(1 per 85 students)	-	-	1	1	1	2	2
Schools - Grades 1-8(100 sq ft per student)	-	-	3200	7400	8900	12,300	13,900
High Schools(164 sq ft per student)	-	-	1804	3608	4920	6724	7708
Special Ed. Services(1 per 12 pupils)	1	1	4	7	10	14	16
HEALTH CARE							
Acute Care(2 beds per 1000 population)	-	-	-	-	2	2	2
Physicians(1 per 1800 population)	-	-	-	-	-	-	-
Dentists(1 per 2000 population)	-	-	-	-	-	-	-
Registered Nurses(1 per 600 population)	-	-	-	1	1	1	1
*Sanitarians(.5 per 1000 population)	-	-	-	-	-	-	-
SOCIAL SERVICES							
*Mental Health Center(.55 per 1000 population)	-	-	-	-	-	-	-
*Psychiatric Beds(.46 per 1000 population)	-	-	-	-	-	-	-
*Social Service Worker(1 per 1000 population)	-	-	-	-	1	1	1
LAW ENFORCEMENT							
Policemen(2 per 1000 population)	-	-	-	-	2	2	2
Patrol Car(1 per patrolman)	-	-	-	-	2	2	2
Jail Space(500 sq ft per 1000 population)	-	-	-	-	500	500	500

Table 3-6
(Continued)

	1983	1985	1987	1989	1991	1995	2000
FIRE PROTECTION							
Fire Flow (Varies)(Gallons per minute)	-	-	-	-	1000	1000	1000
Duration (Hours)	-	-	-	-	4	4	4
LIBRARIES							
Books(2 per person)	96	142	480	876	1092	1226	1272
Library Space(.5 sq ft per person)	24	36	120	219	273	307	318
SEWER							
(100 gallons per person per day)	4800	7100	24,000	43,800	54,600	61,300	63,600
WATER							
Water Rights(800 gallons per connection per day)	12,800	18,400	64,800	114,400	135,200	142,400	144,800
Water Supply(.0008 acre ft per person per day)	.0384	.0568	.1920	.3504	.4368	.4904	.5088
Source Production(1.11 gallons per minute per connection)	17.76	25.53	89.91	158.73	187.59	197.58	200.91
Water Treatment(1600 gallons per connection per day)	25,600	36,800	129,600	228,800	270,400	284,800	289,600
PARKS AND RECREATION							
(6 acres per 1000 population)	-	-	-	-	6	6	6

*No official state standards; standards excerpted from Study of a Conceptual Nuclear Energy Center at Green River, Utah: Socioeconomic Impacts, Salt Lake City, Utah, 1982.

Table 3-7

Case 1

Community Facility Impacts

SUNNYSIDE CITY

	1983	1985	1987	1989	1991	1995	2000
HOUSING - TOTAL	5	8	26	46	54	58	58
Single Family(60%)	3	5	16	28	32	35	35
Multi Family(15%)	1	1	4	7	8	9	9
Mobile Homes(25%)	1	2	6	11	14	14	14
EDUCATION							
Teachers(1 per 25 students)	-	-	1	1	2	2	2
Classrooms(1 per 25 students)	-	-	1	1	2	2	2
Guidance Counselors(1 per 300 students)	-	-	-	-	-	-	-
School Buses(1 per 85 students)	-	-	-	-	-	1	1
Schools - Grades 1-8(100 sq ft per student)	-	-	1100	2400	2900	4000	4500
High Schools(164 sq ft per student)	-	-	492	1148	1640	2132	2460
Special Ed.Services(1 per 12 pupils)	-	-	1	2	3	4	5
LIBRARIES							
Books(2 per person)	32	46	154	282	352	396	410
Library Space(.5 sq ft per person)	8	12	39	71	88	99	103
SEWER							
(100 gallons per person per day)	1600	2300	7700	14,100	17,600	19,800	20,500
WATER							
Water Rights(800 gallons per connection per day)	4000	6400	20,800	36,800	43,200	46,400	46,400
Water Supply(.0008 acre ft per person per day)	.0144	.0184	.0616	.1128	.1408	.1584	.1640
Source Production(1.11 gallons per minute per connection)	5.55	8.88	28.86	51.06	59.94	64.38	64.38
Water Treatment(1600 gallons per connection per day)	8000	12,800	41,600	73,600	86,400	92,800	92,800

Table 3-8

Case 1

Community Facility Impacts

GREEN RIVER CITY

	1983	1985	1987	1989	1991	1995	2000
HOUSING - TOTAL	1	1	2	9	10	11	12
Single Family(60%)	1	1	1	5	6	7	7
Multi Family(15%)	0	0	0	1	1	1	2
Mobile Homes(25%)	0	0	1	3	3	3	3
EDUCATION							
Teachers(1 per 25 students)	-	-	-	-	-	-	-
Classrooms(1 per 25 students)	-	-	-	-	-	-	-
Guidance Counselors(1 per 300 students)	-	-	-	-	-	-	-
School Buses(1 per 85 students)	-	-	-	-	-	-	-
Schools - Grades 1-8(100 sq ft per student)	-	-	-	-	-	-	-
High Schools(164 sq ft per student)	-	-	-	-	-	-	-
Special Ed.Services(1 per 12 pupils)	-	-	-	-	1	1	1
LIBRARIES							
Books(2 per person)	4	6	14	52	68	78	82
Library Space(.5 sq ft per person)	1	2	4	13	17	20	21
SEWER							
(100 gallons per person per day)	200	300	700	2600	3400	3900	4100
WATER							
Water Rights(800 gallons per connection per day)	800	800	1600	7200	8000	8800	9600
Water Supply(.0008 acre ft per person per day)	.0016	.0024	.0056	.0208	.0272	.0312	.0328
Source Production(1.11 gallons per minute per connection)	1.11	1.11	2.22	9.99	11.10	12.21	13.32
Water Treatment(1600 gallons per connection per day)	1600	1600	3200	14,400	16,000	17,600	19,200

Table 3-9
Case 1
Green River Augmentation

Community Facility Impacts

GREEN RIVER CITY

	1983	1985	1987	1989	1991	1995	2000
HOUSING - TOTAL	10	13	38	48	55	59	60
Single Family(60%)	6	8	23	29	33	35	36
Multi Family(15%)	1	2	5	7	5	9	9
Mobile Homes(25%)	3	3	10	12	8	15	15
EDUCATION							
Teachers(1 per 25 students)	-	-	1	1	2	2	2
Classrooms(1 per 25 students)	-	-	1	1	2	2	2
Guidance Counselors(1 per 300 students)	-	-	-	-	-	-	-
School Buses(1 per 85 students)	-	-	-	-	-	1	1
Schools - Grades 1-8(100 sq ft per student)	-	-	1500	2200	2900	4000	4600
High Schools(164 sq ft per student)	-	-	820	1148	1640	2296	2624
Special Ed.Services(1 per 12 pupils)	-	1	2	2	3	5	5
LIBRARIES							
Books(2 per person)	60	76	226	292	356	404	422
Library Space(.5 sq ft per person)	15	19	57	73	89	101	106
SEWER							
(100 gallons per person per day)	3000	3800	11,300	14,600	17,800	20,200	21,100
WATER							
Water Rights(800 gallons per connection per day)	8000	10,400	30,400	38,400	44,000	47,200	48,000
Water Supply(.0008 acre ft per person per day)	.024	.0304	.0904	.1168	.1424	.1616	.1688
Source Production(1.11 gallons per minute per connection)	11.11	14.43	42.10	53.28	61.05	65.49	66.60
Water Treatment(1600 gallons per connection per day)	16,000	20,800	60,800	76,800	88,000	94,400	96,000

Chapter Four

LOCAL GOVERNMENT REVENUE IMPACTS

I. Methodology

The impacts of South Lease development on revenues received by local jurisdictions were developed for four different categories and aggregated. The four revenue sources are: (1) property tax on the mine property itself, (2) property taxes on residential and commercial structures, (3) sales and use taxes, and (4) all other revenue sources. The procedures used to project the additional revenue generated from each of these sources are summarized below:

South Lease Property Tax: It is assumed that the South Lease mine will be assessed by the State Assessed Property Division at the per ton produced level averaged by other Emery County coal mines: $2.51 per ton. Also, it is assumed that the mill levies applied by Emery County and the Emery County School District will be the same as those they imposed in 1982: 16.22 and 38.85 mills, respectively, and that collections as percents of calculated property taxes due will remain constant at the 1979-81 levels of 84 percent and 50 percent for Emery County and Emery School District, respectively.

Residential and Commercial Property Tax: Residential and commercial property tax revenue impacts for the various property tax collecting jurisdictions were projected as functions of their population impacts. Assessed values per capita were calculated for the 1979-81 period for the municipalities to exclude the coal mine and major industrial components of the property tax base. These figures, in 1981 dollars are: Price $3,478, Wellington $2,194, East Carbon $2,278, Sunnyside $2,007, Green River $1,530, and were assumed to hold constant throughout the projection interval. Slight reductions from the Price level were assumed for county and school district assessed valuation. 1982 mill levies were assumed to be applied throughout the projection period. These were: Carbon County 16 mills, Emery County 16.22 mills, Carbon School District 43.66 mills, Emery School District 38.55 mills, Price 14.35 mills, Wellington 11.16 mills, East Carbon 18.18 mills, Sunnyside 6 mills,

and Green River City 21 mills. Finally, it was recognized that property tax collections frequently fall short of calculated taxes due. In jurisdictions where this has historically been true, the 1979-1981 average percentage of calculated tax actually collected was assumed to remain constant over the projection period. The jurisdictions affected and their collection percentages are: Emery County 84%, Emery Schools 50%, Price 80%, and East Carbon 90%.

General Sales and Use Tax: Revenue impacts from this tax were projected as functions of the number of retail trade employees projected to impact the various jurisdictions as a result of South Lease development.(Note: Chapter Two does not present this level of employment detail. It was taken from the detailed SAM model printouts.) Revenue per retail trade plus hotel and lodging employee in 1980 (in 1981 dollars) for the various jurisdictions was: Carbon County $203, Emery County $179, Carbon School District $310, Price $755, Wellington $1,345, East Carbon $5,111, Sunnyside $3,137, and Green River $821. These figures were assumed to remain constant throughout the projection period.

Other Local Revenue: All other sources of local government revenue were assumed to continue to have the same relationship to property tax plus sales tax revenue as was averaged in the 1979-1981 period. These other sources were assumed to provide the following projections of total revenue for the various jurisdictions: Carbon County 57%, Emery County 42%, Carbon School District 58%, Emery School District 24%, Price 48%, Wellington 45%, East Carbon 45%, Sunnyside 49%, Green River 47%.

II. The Revenue Impact Projections

Table 4-1 summarizes the revenue impact projections produced through the above described methodologies and assumptions. It also presents the capital expenditure impact projections and the standards method and per capita method for operating expenditure impact projections as described in Chapter Three. Finally, Table 4-1 presents a projection of each jurisdiction's net cash flow as a result of South Lease development impacts. Note that the standards method net cash flow impacts are positive for all

jurisdictions except Carbon School District and that per capita method net cash flows frequently become slightly negative. As indicated in Chapter Three, the per capita method probably overstates expenditure impacts. The standards method will tend to understate these impacts because not all local government service categories have yet had standards established by DCED. Thus, the actual net cash flow impacts will tend to fall between the two extremes shown in the table and will, therefore, tend toward zero, i.e., revenues will tend to cover expenditures.

The exception to the statement is Carbon School District which will tend to experience a revenue shortfall if state standards are met for the impact population. Thus, impact mitigation for local governments should probably focus on Carbon County schools. Intergovernmental cooperation between Emery County and Carbon County jurisdictions to facilitate Carbon County access to the South Lease mine property tax revenues can make a useful contribution here. Also, recall that excess capacity and declining Baseline population in the East Carbon-Sunnyside area will allow part of the capital expenditure impacts to be offset by utilization of otherwise underutilized facilities.

Table 4-1

SOUTH LEASE CASE 1
SUMMARY OF LOCAL GOVERNMENT REVENUE
AND EXPENDITURE IMPACTS
(Thousands of 1981 Dollars)

	1983	1985	1987	1989	1991	1995	2000	Total Capital Expenditures
Carbon County								
Revenue	17	25	80	194	263	309	326	
Capital Expenditures*	74	L	2	5	3	1	L	101
Operating Costs(Std)	0	0	57	128	181	201	208	
Total Expenditures	74	L	59	133	184	202	209	
Net Cash Flow	(57)	24	21	61	79	107	116	
Operating Costs(PC)	20	30	95	229	311	365	386	
Total Expenditures	94	30	97	234	314	366	387	
Net Cash Flow	(77)	(6)	(17)	(40)	(51)	(57)	(61)	
Emery County								
Revenue	L	3	30	63	84	84	84	
Capital Expenditures*	L	L	L	L	L	L	L	L
Operating Costs(Std)	0	0	0	0	0	0	0	
Total Expenditures	L	L	L	L	L	L	L	
Net Cash Flow	L	3	30	63	84	84	84	
Operating Costs(PC)	1	1	3	11	15	17	18	
Total Expenditures	1	1	3	11	15	17	18	
Net Cash Flow	(1)	2	27	152	69	67	67	
Carbon School District								
Revenue	45	65	217	508	688	809	854	
Capital Expenditures*	165	30	284	667	546	346	144	5322
Operating Costs(Std)	43	59	195	519	781	1119	1294	
Total Expenditures	208	89	479	1186	1327	1465	1438	
Net Cash Flow	(163)	(24)	(262)	(678)	(639)	(656)	(584)	
Price Schools								
Capital Expenditures*	0	0	98	154	211	133	58	1953
Operating Costs(Std)	12	18	53	185	297	437	513	
Total Expenditures	12	18	151	339	508	570	571	

Table 4-1
(Continued)

	1983	1985	1987	1989	1991	1995	2000	Total Capital Expenditures
Wellington Schools								
Capital Expenditures*	0	0	0	59	33	26	13	356
Operating Costs(Std)	2	2	8	31	49	76	90	
Total Expenditures	2	2	8	90	82	102	103	
East Carbon/Sunnyside Schools								
Capital Expenditures*	0	0	211	254	121	109	44	1827
Operating Costs(Std)	23	31	111	223	308	424	480	
Total Expenditures	23	31	322	477	429	533	524	
Emery School District								
Revenue	L	4	43	88	117	118	118	
Capital Expenditures*	0	0	0	0	0	0	64	64
Operating Costs(Std)	0	0	2	13	20	27	31	
Total Expenditures	0	0	2	13	20	27	95	
Net Cash Flow	L	4	41	75	97	97	23	
Price City								
Revenue	8	11	33	93	131	155	165	
Operating Costs(Std)	0	0	0	0	78	95	99	
Net Cash Flow	8	11	33	93	53	61	66	
Operating Costs(PC)	8	12	35	112	162	197	210	
Net Cash Flow	L	(1)	(2)	(19)	(31)	(41)	(45)	
Wellington City								
Revenue	L	L	3	8	12	15	16	
Operating Costs(Std)	0	0	0	0	0	0	0	
Net Cash Flow	L	L	3	8	12	15	16	
Operating Costs(PC)	1	1	3	10	15	18	20	
Net Cash Flow	L	(1)	L	(2)	(3)	(3)	(4)	

Table 4-1
(Continued)

	1983	1985	1987	1989	1991	1995	2000	Total Capital Expenditures
East Carbon City								
Revenue	12	13	51	90	106	119	129	
Operating Costs(Std)	0	0	0	0	70	75	77	
Net Cash Flow	12	13	51	90	36	44	52	
Operating Costs(PC)	7	11	37	68	85	96	99	
Net Cash Flow	4	2	13	20	21	23	30	
Sunnyside City								
Revenue	L	1	8	15	21	22	22	
Operating Costs(Std)	0	0	0	0	0	0	0	
Net Cash Flow	L	1	8	15	21	22	22	
Operating Costs(PC)	2	3	10	18	22	25	26	
Net Cash Flow	(2)	(2)	(2)	(3)	(1)	(3)	(4)	
Green River City								
Revenue	L	L	L	3	3	5	5	
Operating Costs(Std)	0	0	0	0	0	0	0	
Net Cash Flow	L	L	L	3	3	5	5	
Operating Costs(PC)	L	L	1	4	8	6	5	
Net Cash Flow	L	L	(1)	(1)	(1)	(1)	(1)	
Augmentation of Green River City								
Revenue	3	4	12	16	19	22	23	
Operating Costs(Std)	0	0	0	0	0	0	0	
Net Cash Flow	3	4	12	16	19	22	23	
Operating Costs(PC)	4	6	17	21	26	29	31	
Net Cash Flow	(1)	(2)	(4)	(5)	(7)	(7)	(8)	

*Capital expenditures are the average for the years shown.

L: Less than $1,000.

Totals may not add due to rounding.

Std: Standards Method
PC: Per capita Method

Intermountain Scientific Associates

September 21, 1982

RECEIVED
SEP 23 1982
DIVISION OF
OIL, GAS & MINING

Mr. Steven G. Cox
Reclamation Biologist
Division of Oil, Gas & Mining
4241 State Office Building
Salt Lake City, Utah 84114

Dear Mr. Cox:

Burrowing owl and black-footed ferret surveys were conducted for Kaiser Steel's South Lease Coal Project in June and August, respectively. This package contains:

- Burrowing owl report
- A letter from Mr. Olin Bray, USFWS, Denver office, re: recommended ferret survey procedures
- The first page, Draft - Recommended Criteria and Procedures for Black-Footed Ferret Surveys
- A letter to Kaiser Steel documenting the results of the ferret survey.

If you have any questions or comments, please contact me.

I checked the ferruginous hawk nests (see page 3 of the burrowing owl report) during the April reconnaissance survey and during the June owl survey; they were not used this year. This is probably the 3rd or 4th year of abandonment.

Sincerely,

Curt Jansen

Curt Jansen

CJ:djl
Enclosures - 4

1322 Webster Avenue • Fort Collins, Colorado 80524 • Phone [303] 221-3241

United States Department of the Interior
FISH AND WILDLIFE SERVICE

MAILING ADDRESS:
Post Office Box 25486
Denver Federal Center
Denver, Colorado 80225

STREET LOCATION:
134 Union Blvd.
Lakewood, Colorado 80228

IN REPLY REFER TO:

AUG 5 1982

Curt Jansen
1322 Webster Ave.
Ft. Collins, CO 80524

Dear Mr. Jansen:

Here are the survey procedures you requested. Information being collected on the ferrets near Meeteetse, WY will result in changes to this draft. You should call before going into the field with these.

Sincerely yours,

Olin E. Bray

Olin E. Bray
Staff Biologist
(303)234-2496

DRAFT

Date: March 9, 1981

RECOMMENDED CRITERIA AND PROCEDURES FOR BLACK-FOOTED FERRET SURVEYS

The Endangered Species Act requires Federal agencies to ensure that any action authorized, funded, or carried out by them is not likely to jeopardize the continued existence of any threatened or endangered species. The National Environmental Policy Act requires that an assessment of the environmental disturbance be made for any major Federal action that significantly affects the quality of the human environment. As a part of this assessment, wildlife surveys and inventories of a reliable nature, performed on an adequate land area, are needed to determine the potential effects of the Federal actions. To satisfy the above requirements, Federal agencies must often determine if black-footed ferrets, an endangered species, exist in the area of a proposed action. Examples of these actions include surface mining, pipelines, roads, dams, transmission lines, grazing leases, and prairie dog control programs. The following criteria and procedures are recommended as standards for black-footed ferret surveys where prairie dogs exist within the historic range of the ferret. The criteria and procedures are subject to modification as new information becomes available.

AREA PROJECTS

Examples of area projects are lease lands, surface mining sites, power plant sites, well fields, water reservoirs, and prairie dog control programs. If the entire project is to be completed within a year of the

DRAFT

Intermountain Scientific Associates

September 21, 1982

Mr. J. R. Barber, Manager
Planning and Special Projects
Kaiser Steel Corporation
300 Lakeside Drive
P. O. Box 58
Oakland, California 94604

Dear Mr. Barber:

Re: South Lease Coal Property
Kaiser Steel Corporation
Emery County, Utah

During a 1981 site visit to the South Lease properties, biologists with DOGM and USFWS recommended a search for the black-footed ferret, a species which appears on the Federal List of Threatened and Endangered Wildlife Species.

This letter will serve to document the results of the black-footed ferret survey conducted on the South Lease and selected adjacent areas during 13 August to 15 August 1982.

During the June, 1982 burrowing owl nesting survey, I noted the absence of prairie dogs in what had been mapped in 1981 as the active area. I thought that perhaps my failure to see prairie dogs was due to reproductive activity and/or chance occurrence. Thus, a primary objective of the ferret survey was to confirm the absence of prairie dogs in addition to the search for ferrets.

The previously active prairie dog town was searched during walking surveys conducted on 14 and 15 August. Three areas of dense burrows were searched by spotlight from 0330 to 0600 on 13 August. It rained steadily, beginning at 0500, so ground searching was abandoned for that day. No prairie dogs or prairie dog sign was observed. All droppings found were weathered and in an advanced state of decomposition. The burrows had not been maintained and vegetation around the burrows was unclipped. Some burrows had claw marks in the entry which may have been made by cottontails. Cottontails were numerous in the study area. No additional spotlighting was deemed necessary.

1322 Webster Avenue • Fort Collins, Colorado 80521 • Phone [303] 221-3241

I spoke with Larry Dalton, Utah Division of Wildlife Resources, during my June field trip regarding the disappearance of prairie dogs, and he suggested that they are known to migrate. I subsequently searched the inactive town and areas south and east of the active town, but no prairie dogs or sign were found. We also discussed the possibility of elimination by shooting. It would be extremely difficult to shoot all the prairie dogs in a town as large as on the study area, where burrow density is low.

Poisoning is not likely because the study area is federal land and poisoning is prohibited on federal land unless carried out by federal agents. David Mills, BLM biologist-Price, reported no poisoning program for the study area (personal communication on 16 August).

Disease is a possibility. Dr. William Lance, a wildlife pathologist with Western Wildlife Laboratories, suggested plague as a causative factor.

If you want any follow-up on this, let me know.

Sincerely,

Curt Jansen

Curt Jansen

CJ:djl
Enclosure

cc: Ms. Marcia Wolfe

(FILE ACT/015/008
Copy to Cy

JIM
AUG 0 9 1982

SCOTT M. MATHESON
GOVERNOR

STATE OF UTAH
DEPARTMENT OF COMMUNITY AND
ECONOMIC DEVELOPMENT

Division of
State History
(UTAH STATE HISTORICAL SOCIETY)

MELVIN T. SMITH, DIRECTOR
300 RIO GRANDE
SALT LAKE CITY, UTAH 84101
TELEPHONE 801 / 533-5755

July 28, 1982

Mr. James W. Smith, Jr.
Coordinator of Mined Land Development
Division of Oil, Gas, & Mining
4241 State Office Building
Salt Lake City, Utah 84114

Re: Mine Plan Submittal, Kaiser Steel Corporation, South Lease Mine, ACT/015/008, Emery County, Utah

Dear Jim:

The staff of the Utah State Historic Preservation Officer has received your letter of May 12, 1982, requesting consideration of the Kaiser Steel Corporation, South Lease Mine application.

Our office has reviewed the mine plan, as stipulated by the Memorandum of Understanding signed between our two agencies, and will further assist the Division of Oil, Gas, & Mining in its requirements set forth in MC 761.12(f) of the coal mining regulations.

After review of the material contained in our cultural resource section, prepared by the contractors for Kaiser Steel, our office believes that the content of the report is adequate to submit to the Office of Surface Mining. It should be noted to the Division of Oil, Gas, & Mining that this plan was initially rejected by the Bureau of Land Management for technical reasons concerning eligibility and effect. An addendum was prepared to meet the objection of the Bureau of Land Managment. The acceptance of the report is not cleared, at this time, with the Bureau of Land Management.

Our office feels that there is adequate information for documentation of the archeological sites. The consequences of effect may be somewhat unclear, as well as a proposed mitigation plan for any determinations of adverse effect.

In summary, it is our recommendation to the Division of Oil, Gas, & Mining that the mine plan be considered complete and that the objections of the Bureau of Land Management be monitored to determine whether or not the Office of Surface Mining will have any problem with the report.

State History Board: Milton C. Abrams, Chairman • Theron H. Luke • Ted J. Warner • Elizabeth Montague • Thomas G. Alexander
Dello G. Dayton • Wayne K. Hinton • Helen Z. Papanikolas • David S. Monson • Elizabeth Griffith • William D. Owens

The above is provided, upon request, as information or assistance. We make no regulatory requirements since that responsibility rests with the federal agency officials. However, if you have any questions or need further assistance, please let us know. Contact Wilson Martin or Jim Dykman at 533-7039.

Sincerely,

Melvin T. Smith
Director and
State Historic Preservation Officer

JLD:lo F187/4121c

(File)
ACT/015/008
~~Copy to C/K/EV~~

PETER W. BILLINGS
ALBERT J. COLTON
RALPH H. MILLER
GEORGE D. MELLING, JR.
WARREN PATTEN
M. BYRON FISHER
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SALT LAKE CITY, UTAH 84101-2097

TELEPHONE
(801) 531-8900

HAROLD P. FABIAN
1885-1975
BEVERLY S. CLENDENIN
1889-1971
CLIFFORD M. STODDARD
1909-1974

JIM

AUG 17 1982

July 20, 1982

RECEIVED
JUL 21 1982
DIVISION OF
OIL, GAS & MINING

Mr. James W. Smith, Jr.
Coordinator, Mined Land Development
State of Utah
Department of Natural Resources & Energy
4241 State Office Building
Salt Lake City, Utah 84114

RE: Kaiser Steel Corporation, South Lease Mine,
ACT/015/008, Emery County, Utah

Dear Jim:

Your letter of May 12, 1982 to Carolyn M. Jones, Office of State Planning Coordinator, informed the Resource Development Coordinating Committee of the Division's receipt of Kaiser Steel Corporation's mine plan submitted for the South Lease Mine in Emery County, Utah. The letter further indicates the Division's intent to submit an environmental assessment to the RDCC upon completion of mine plan review.

On behalf of Kaiser Steel Corporation, we respectfully request that the Division prepare the environmental assessment for RDCC review upon determination of application completeness rather than submitting this review upon completion of the Division's substantive review. It is our understanding that the RDCC review process requires forty-five days at a minimum and that this review can take place simultaneously with the Division's substantive review of the mine plan. Simultaneous processing of the RDCC evaluation may eliminate forty-five to sixty days from permit review time and could enable Kaiser Steel Corporation to commence mining operations in a more timely manner.

We appreciate your assistance in this matter and hope that this suggestion will save valuable time for both the State and Kaiser Steel Corporation.

Very truly yours,

Denise A. Dragoo

Denise A. Dragoo

DAD:jk
cc: Joe Taylor, J. R. Barber

STATE OF UTAH
NATURAL RESOURCES & ENERGY
Oil, Gas & Mining

Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Cleon B. Feight, Division Director

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

June 28, 1982

Mr. Anthony J. Frates
Utah Native Plant Society
P. O. Box 6257
Salt Lake City, Utah 84106

RE: Threatened and Endangered
Plant Species
Kaiser Steel Corporation
South Lease Coal Property
PRO/015/008
Emery County, Utah

Dear Mr. Frates:

This is in regard to your letter of May 10, 1982 concerning possible rare and endangered plant species on the Kaiser South Lease Coal Property. A thorough search for these plant species was conducted by Kaiser in each of eight vegetation types to be disturbed during mining operations. Studies were conducted from late June to September 1981. No rare or endangered species were located.

In addition, in a letter dated February 25, 1981 from William C. White, Acting Area Manager, U. S. Fish and Wildlife Service, to the Division, it was indicated that to the best of their knowledge, there are no threatened or endangered plant species occurring in the area of planned disturbance.

If Utah Native Plant Society has any updated information on possible rare and endangered plant species in the area, we would appreciate hearing from you.

Sincerely,

Steven G. Cox

STEVEN G. COX
RECLAMATION BIOLOGIST

SGC/btb

Board/Charles R. Henderson, Chairman • John L. Bell • E. Steele McIntyre • Edward T Beck
Robert R. Norman • Margaret R. Bird • Herm Olsen

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Penstemon
utahensis

Sue,
Please respond.
Thx.
JIM

UTAH NATIVE PLANT SOCIETY

Reply to: P. O. Box 6257
SLC UT 84106

MAY 12 1982

May 10, 1982

State of Utah Natural Resources & Energy
Division of Oil, Gas & Mining
4241 State Office Bldg.
Salt Lake City UT 84114

Re: Kaiser Steel Corporation
Mining & reclamation plan
South Lease Coal Property
Emery County

Gentlemen:

In reference to the above application and plan, we are wondering whether or not any rare and endangered plant species are involved, and if so, what steps are being proposed to avoid impacts. By "rare and endangered plant species" reference is being made not only to federally listed species but also those species considered rare or sensitive and listed on the UNPS list of December, 1981.

Thank you.

Very truly yours,

UTAH NATIVE PLANT SOCIETY

Anthony J. Frates, President

AJF:sf

RECEIVED
MAY 11 1982
DIVISION OF
OIL, GAS & MINING

File ACT/015/008

Pl to Jim
Please note, this is on the same day as the Board mtg.
Copy to Cy & Ev
Please Attend w/ person doing soc-econ review

United States Department of the Interior
OFFICE OF SURFACE MINING
Reclamation and Enforcement
BROOKS TOWERS
1020 15TH STREET
DENVER, COLORADO 80202

June 25, 1982

JIM

JUL 08 1982

Mr. Joe Taylor
V.P. Coal Group
Kaiser Steel Corporation
Kaiser Steel
P.O. Box 58
300 Lakeside Drive
Oakland, CA 94604

Dear Mr. Taylor:

A meeting will be held on July 26, 1982 in Salt Lake City to discuss the socioeconomic assessment of Kaiser Steel's proposed South Lease Mine. The meeting will take place in room 322 of the State Capitol and will begin at 1:00 p.m. The attached agenda is proposed for this meeting.

A subsequent mailing will be sent to you from Denise Dragoo and will contain materials developed by Rodger Weaver and Associates. This material should be reviewed prior to the July 26th meeting.

If you have any questions or additions to the agenda, please contact Sarah Bransom at (303) 837-5656.

Sincerely,

Allen D. Klein

Allen D. Klein
Administrator
Western Technical Center

RECEIVED
JUL 07 1982
DIVISION OF
OIL, GAS & MINING

cc: Denise Dragoo
Rodger Weaver
Dan Hunter
Keith Burnett
Richard Walker
Brad Barber
Gary Tomsic
Blaine Evans
Ron Daniels

PROPOSED AGENDA

July 26, 1982

Room 322 SCB- 1:00 p.m.

I. Finalization of Memorandum of Understanding- Denise Dragoo

II. Presentation/Discussion of Baseline Projections-Rodger Weaver
Participants

III. Presentation/Discussion of Alternative Scenarios- Rodger Weaver
Kaiser
Participants

IV. Discussion of Need for Additional Runs- Participants

V. Assessment Development/Schedule- Rodger Weaver

VI. Next Meeting

June 29, 1982

Memo to Coal File:

RE: South Lease - Kaiser Steel Corp.
Sile Visit
ACT/015/008
Emery County, Utah

On June 24, 1982 the South Lease Coal review team, comprised of Cy Young, Ev Hooper, Steve Cox, Dave Darby and Tammy Balkenbush met with Kaiser Steel representatives Doug Pearce and Bart Hyita, for a tour of the proposed South Lease Coal Property.

The Little Park Wash area, above the Book Cliffs, was the first area visited. The proposed surface facilities in this area will include a 40,000-ton coal stockpile, main portal, exhaust fan and portal, diesel generator, bath-house, office, parking lot and other necessary surface structures. The main concerns, which will be addressed in the course of the mine plan review, are:

1. The location of the coal stockpile and its protection from washout by possible flash floods.

2. The location of the access road in the bottom of the wash.

3. The area, of critical winter habitat for bear, which will be affected by the surface disturbances.

4. The use of the BLM road for access through Horse Canyon.

The area of main disturbance, at the base of the Book Cliffs was visited. Location for the main protals, bathhouse, parking lot and other structures were pointed out by Doug Pearce. Upon initial inspection of this area no real concerns were voiced by team members.

A cursory inspection of the burrowing owl habitat was made so as to orient its location with proposed access roads and other surface facilities.

CYRIL YOUNG
ENGINEERING GEOLOGIST

CY/mn

cc: Ev, Steve, Dave, Tammy

Statistics: Vehicle #5424 - 310 miles
Per Diem: 4 persons x 1.0 days - $125.00 approx.
1 person x 1.0 day - $39.00 approx.

P120/015/008

Intermountain Scientific Associates

June 15, 1982

Copy letter and report to Cy and Steve and take original Thanks

Mr. Steven Cox
Reclamation Biologist
Division of Oil, Gas and Mining
4241 State Office Building
Salt Lake City, Utah 84114

Dear Mr. Cox:

Enclosed is the Study Design for Burrowing Owls on the Kaiser South Lease Mine project. I've also sent a copy to Bruce Waddell, USFWS. I need to conduct the study within the next two weeks, so I'll have to get your input via the telephone.

I'll be talking with you soon.

Sincerely,

Curt Jansen

Curt Jansen
ISA

CJ:jl
Enclosure

RECEIVED
JUN 22 1982
DIVISION OF
OIL, GAS & MINING

1322 Webster Avenue • Fort Collins, Colorado 80524 • Phone [303] 221-3241

STUDY DESIGN

for

Kaiser Steel

South Lease Permit Area

A PRE-MINE STUDY TO DETERMINE NUMBER AND LOCATION OF BURROWING OWL NESTS

by

Curt Jansen
Wildlife Ecologist

INTRODUCTION

Kaiser Steel Corporation (Kaiser) plans to develop an underground coal mine in Emery County, Utah. The Mine Permit Area is located along the eastern side of the Price River Valley and extends east of the Book Cliffs. An application for a mine permit was submitted to regulatory authorities in April 1982.

A transportation corridor will be constructed between highway 6 and the mine facilities in the Mine Permit Area (Figure 1). A site access/coal haulage road and a railroad spur will be constructed within the 400 foot wide corridor. The corridor bisects a prairie dog town (white-tailed prairie dog, Cynomys leucurus), 35 acres of which is within the corridor. The prairie dog town consists of mostly active burrows to the southwest covering 380 acres, and mostly inactive burrows to the northeast covering 200 acres. Eleven acres of the unoccupied burrows are within the corridor (except for the corridor width, the numbers used in this paragraph are estimates).

The construction of the road and railroad spur will result in the disturbance of some of the land within the corridor. For the purpose of this study, it is assumed that the disturbance will include all 35 acres.

Burrowing owls (Speotyto cunicularia) were observed in different locations in both active and inactive prairie dog towns during the 1981 summer field studies. The burrowing owl is protected under the Migratory Bird Treaty Act (PL 93-300, 1974) and it is one of 22 bird species which are on the list of Migratory Birds of High Federal Interest compiled by the U.S. Fish and Wildlife Service (USFWS).

On 10 September 1981 biologists representing the Division of Oil, Gas and Mining (DOGM) and the USFWS visited the site to consult with Kaiser personnel and the author (biologist/consultant) regarding the burrowing owls. A letter dated 1 October 1981 from Susan Linner,

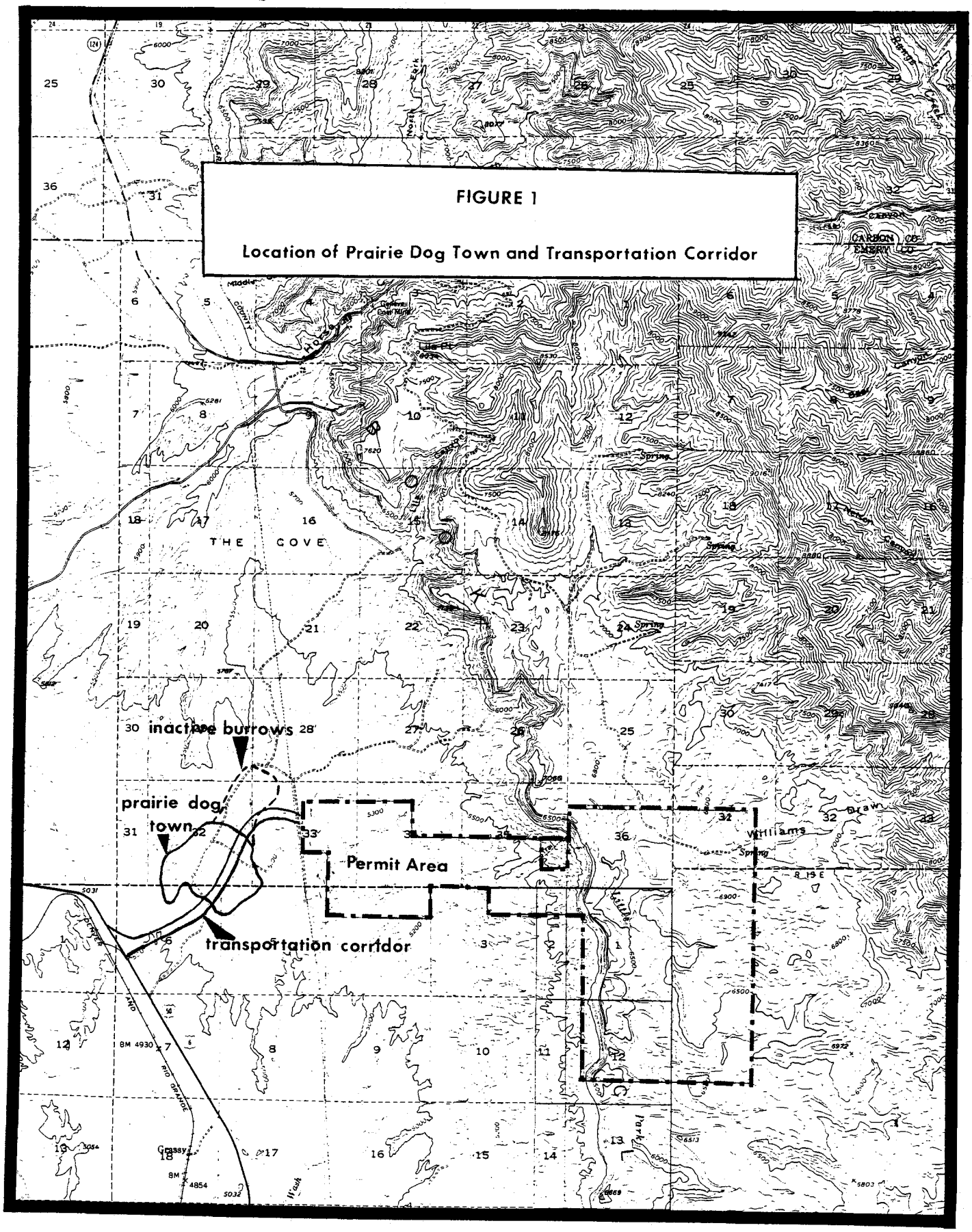
FIGURE 1
Location of Prairie Dog Town and Transportation Corridor
THE COVE
inactive burrows
prairie dog town
Permit Area
transportation corridor
Williams Draw
Spring
CARBON CO
EMERY CO

Reclamation Biologist, DOGM to Marcia Wolfe, Reclamation Engineer, Kaiser stated the recommendations agreed to by Susan, Shirley Lindsay of the Office of Surface Mining and Bruce Waddell, USFWS. Their recommendations were:

1. Avoid construction activities during the breeding season (roughly April to mid-July).
2. Make the road right-of-way as small as possible. If possible, change the road and railway right-of-ways so that the railroad is closer to the prairie dog town.
3. Fence the dog town during construction, so there is not unnecessary disturbance, i.e., storing vehicles or equipment, or heavy equipment turning around in the town.
4. Make some suitable holes away from the right-of-way to mitigate lost nesting habitat.
5. Survey the area for breeding burrowing owls, ferruginous hawks and black-footed ferrets during the spring and summer.

Recommendation five is the substance of this study design. The results of the burrowing owl and black-footed ferret surveys (the ferret survey is planned for August) will determine if action should be taken on the other recommendations.

STUDY DESIGN

Objectives

1. To determine if the prairie dog town is breeding habitat for burrowing owls,

If nest behavior or nests are observed:

2. To determine the number of nesting pairs and the location of the nests.

Background

The burrowing owl uses the burrows of prairie dogs or other colonial burrowing mammals for nesting (Butts 1973, Zarn 1974, Call 1978, Olendorff et al. 1980). According to Call (1978), owls that are migratory return to their habitual nesting areas by mid-April. The events that follow in the reproductive process are pair formation, courtship behavior, copulatory behavior, selection of nest burrows (can occur during courtship and copulatory activity), egg laying,

incubation, hatching, young rearing and fledging (Zarn 1974). The timing of events varies with locality and weather conditions. Generally, the cycle is delayed in the northern part of their range. Utah is centrally located in a breeding distribution that ranges from southern Canada to central Mexico.

The best time to locate nest burrows is when nesting activity is at its peak, which is during incubation, hatching and young rearing. In the panhandle of Oklahoma this occurs during the first 2 weeks of June (Butts 1973). According to Call's (1978) nesting phenology of birds of prey, the peak is the month of June.

Methods

The prairie dog town will be searched for nesting owls during early morning and early evening.

Observations will be made with 8X binoculars and a 20-25X scope. Initial observations will be from a vehicle during stops along a route that roughly parallels the northwest, northeast and southeast boundaries of the active and inactive towns. Most of the route is inside the boundaries.

After observations along the vehicle route, the entire area will be examined on foot. Butts (1973) suggests that flushing females, paired owls and nest debris around a burrow entrance are signs of nesting owls. All suspected nest burrows will be flagged to facilitate location during subsequent observation periods. Suspect nests will be observed on a regular basis until confirmation is possible or the nests are no longer suspect. All confirmed nest burrows will be photodocumented (35 mm) and located on a 1" = 400' scale map.

The survey period will be five days. Until suspect nests are located, searching will be systematic to achieve an equal distribution of effort over the entire area.

The survey results will be submitted in a report. The report will include photodocumentation and a location map of nest burrows. Recommendations will be made regarding mitigation measures.

LITERATURE CITED

Butts, K. O. 1973. Life history and habitat requirements of burrowing owls. M.S. Thesis. Oklahoma State Univ., Stillwater. 188 pp.

Call, M. W. 1978. Nesting habitats and surveying techniques for common western raptors. U.S. Dep. Int., Bur. Land Manage. Tech. Note TN-316. 115 pp.

Olendorff, R. R., R. S. Motroni, and M. W. Call. 1980. Raptor management--the state of the art in 1980. IN Management of western forests and grasslands for nongame birds. U.S. Dep. Agric., For. Serv. Tech. Rep. INT-86. Workshop proceedings.

Zarn, M. 1974. Burrowing owl (Speotyto cunicularia hypugaea). U.S. Dep. Int., Bur. Land Manage. Tech. Rep. No. TN-250. 25 pp.

STATE OF UTAH
NATURAL RESOURCES & ENERGY
Wildlife Resources

1596 West North Temple • Salt Lake City, UT 84116 • 801-533-9333

Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Douglas F. Day, Division Director

(File)
ACT/015/008

RECEIVED
JUN 04 1982

DIVISION OF
OIL, GAS & MINING

Copy to Cy, Ev, Steve

JIM

JUN 03 1982

May 26, 1982

Mr. Cleon B. Feight, Director
Division of Oil, Gas and Mining
State Office Building
Salt Lake City, Utah 84114

Attention: James Smith

Dear Jack:

The Division has reviewed the Mining and Reclamation Plan (MRP) submitted by Kaiser Steel Corporation for their South Lease Mine. The MRP as it relates to identification of the wildlife resource, habitats and wildlife use areas associated with the project is of high quality. Some of the wildlife data in the MRP is irrelevant to the project and is of poor quality. Identification of significant impacts to the wildlife resource are not complete and the mitigation section (pages x-32 through x-34) needs more consideration by the applicant.

The deer herd data presented on pages x-12 through x-15 and in table x-2 that relates to units 27a and 19 are irrelevant to the project. The data has been poorly analyzed and incorrectly compared to unit 27b. This data should either be deleted or an appropriate analysis and comparison made. A great many circumstances influence hunter success, herd productivity and even the Division's ability in individual years to estimate those parameters. The applicant's attempt to illustrate any aspect of deer management with a single year's data is without justification when numerous data are available.

The MRP identifies that 29 acres of critical valued deer winter range will be lost due to occupancy by surface facilities. It also suggests an "intolerance" zone in which deer will not forage due to disturbance from the project. Possibly, over time, deer will habituate and the "intolerance" zone will become smaller. The MRP should provide some relative estimate of the acreage of critical valued habitat that may be lost due to deer's intolerance of the proposed surface facilities and operation (reference paragraph 2, page x-29). The DWR estimates the intolerance zone to approximately 279 acres.

Without question the project will physically destroy 29 acres (12 ha) of critical valued deer winter range. Likely, another 279 (113 ha) acres of

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critical valued habitat, although not destroyed, will become unacceptable to mule deer. The MRP fails to define mitigation to offset such a loss. The mitigation identified in the MRP of transporting employees and supplies to the winter range area by helicopter will avoid and thus mitigate for impacts to other portions of the winter range that would have resulted from development and use of an all-season access road.

Note that on page x-35 the applicant has indicated a potential need to trap and move burrowing owls with nests as a mitigation for impacts that would result from right-of-way construction. Such an action could only be conducted by the Division of Wildlife Resources or the U.S. Fish and Wildlife Service. Movement of a nest is not without risk and is the least preferred alternative. It is preferred that either the road alignment be such that prairie dog colonies (nesting habitat for burrowing owls) be avoided or construction be initiated early in the spring season, prior to April 1, before breeding owls begin prenuptial displays and make burrow selections. It would also be equally acceptable to delay initiation of construction until after mid-July when the young and adult birds would not be significantly impacted by being displaced from preferred burrows. In any event, the applicant must survey the right-of-ways for burrows and nests immediately preceding construction if work is to be done between April 1 and July 15 of any year.

Concerning burrowing owls, it is also recommended that the alignment of the railroad in relation to the road access be such that the railroad will screen and deter access to a majority of the prairie dog area. It is not necessary to sign the prairie dog area; such action would draw unnecessary attention to that resource. The Company's employee education program will be sufficient to protect the resource associated with the prairie dog colony.

The complete and final study proposals for evaluating deer use of the Little Park area, burrowing owls and black-footed ferrets should be part of the MRP. The discussion on page x-35 of such a study does not closely parallel the study design for deer as submitted by Kaiser and currently under review by DWR.

Thank you for an opportunity to review the MRP. The Division anticipates an opportunity to review the various sections when modified or ammended by Kaiser.

Sincerely,

Douglas F. Day
Director

STATE OF UTAH
NATURAL RESOURCES & ENERGY
Oil, Gas & Mining

Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Cleon B. Feight, Division Director

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

May 12, 1982

Mr. Ralph A. Miles, Director
Division of State Lands & Forestry
3100 State Office Building
Salt Lake City, Utah 84114

RE: Mine Plan Submittal
Kaiser Steel Corporation
South Lease Mine
ACT/015/008
Emery County, Utah

Dear Mr. Miles:

This letter is submitted as notification to State Lands that this Division has received a permit application from Kaiser Steel Corporation, to commence coal mining activities in State Sections 35 and 36, Township 16 South, Range 14 East; Section 31, Township 16 South, Range 15 East; Section 1 and 12, Township 17 South, Range 14 East; and, Section 6 and 7, Township 17 South, Range 15 East, Emery County, Utah. Upon completion of its review, this Division will forward notification of its tentative approval decision(s) to your office.

If you or your staff have any questions, please contact Cy Young of my staff.

Sincerely,

JAMES W. SMITH, JR.
COORDINATOR OF MINED
LAND DEVELOPMENT

JWS/CY:btb

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STATE OF UTAH
NATURAL RESOURCES & ENERGY
Oil, Gas & Mining

Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Cleon B. Feight, Division Director

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

May 12, 1982

Mr. Melvin T. Smith
State Historic Preservation Officer
Division of State History
307 West 200 South, Suite 100
Salt Lake City, Utah 84101

RE: Mine Plan Submittal
Kaiser Steel Corporation
South Lease Mine
ACT/015/008
Emery County, Utah

Dear Mr. Smith:

Enclosed please find a copy of the cultural and historic portions of the Mining and Reclamation Plan (MRP) referenced above. This MRP is forwarded for review by the Division of State History in accordance with our Memorandum of Understanding (MOU).

As you may recall, the MOU between our Divisions' calls for the following:

B. Mining Plan:

1. Upon submission of a coal mining and reclamation plan to the Division of Oil, Gas & Mining, the Division of Oil, Gas & Mining will notify the SHPO in writing of the need for consultation and evaluation of the plan with respect to historic and cultural resources. The Division of Oil, Gas & Mining will provide a copy of the relevant portion of the plan to the SHPO.

2. The SHPO will respond to the Division of Oil, Gas & Mining in writing within 30 days of receipt of the notification. The SHPO will include in such response an evaluation of the adequacy or inadequacy of the plan submitted by the operator to avoid, ameliorate or mitigate impacts of the proposed operation on historic and cultural resources.

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3. Where the proposed mining plan, will, in the judgment of the SHPO, adversely effect sites listed on, or potentially eligible for listing on the National Register of Historic Places, the SHPO shall proceed pursuant to 36 CFR 800. The SHPO will further assist the Division of Oil, Gas & Mining in its requirements set forth in MC 761.12(f) of the Coal Mining Regulations and make recommendations for survey and mitigation as appropriate.

The Division appreciates your cooperation and asks that all comments and communications, regarding the mining and reclamation plan review, be channeled through this office to allow a single set of stipulations and requirements to be sent to the operator. If you have any questions, please contact myself or Cy Young of my staff.

Sincerely,

JAMES W. SMITH, JR.
COORDINATOR OF MINED
LAND DEVELOPMENT

Enclosure: MRP, copy 4 of 6

JWS/CY:btb

STATE OF UTAH
NATURAL RESOURCES & ENERGY
Oil, Gas & Mining

Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Cleon B. Feight, Division Director

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

May 12, 1982

Mr. Dennis Dalley
Department of Health
Division of Environmental Health
P. O. Box 2500
Salt Lake City, Utah 84101

RE: Mine Plan Submittal
Kaiser Steel Corporation
South Lease Mine
ACT/015/008
Emery County, Utah

Dear Mr. Dalley:

Enclosed please find one copy of the above referenced Mining and Reclamation Plan (MRP). The MRP is being forwarded for review by the Division of Environmental Health of your office.

As you will recall, the MOU between our Divisions' calls for the following:

B. Mine Plan Review.

1. Upon submission of a mining and reclamation plan to DOGM, the DOGM, shall, in consultation with DOH, review the operator's list of licenses, permits or approvals to determine whether or not approvals from DOH have been issued.

2. If any permits or approvals from the DOH have not been issued, the DOGM will submit to the DOH those parts of the permit application containing matters within the DOH's jurisdiction or interest for review and response and inform the operator in writing that he must contact DOH for the appropriate permits and approvals.

3. If additional information is required by DOH for any permit or approval, the DOH shall contact the operator for such information. Copies of any such requests and the operator's reponse to such request shall be forwarded by DOH to DOGM.

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4. Within two weeks of receipt by DOGM of the mining operator's submission and any additional information requested, each DOH bureau shall contact the DOGM with preliminary written notification of the status of any outstanding permits or approvals. If DOH determines to reject the operator's permit application or has any major problems with the operator's mine plan, the DOGM may convene a conference between the state agencies and the operator as soon as possible.

5. The DOH will make every effort to have their response to the mine plan and any other DOH permits and approvals finally completed within 60 days of the DOH receipt for the operator's complete application for DOH permits and approvals.

The Division appreciates your cooperation and asks that all comments and communications, regarding the mining and reclamation plan review, be channeled through this office to allow a single set of stipulations and requirements to be sent to the operator. If you have any questions, please contact myself or Cy Young of my staff.

Sincerely,

JAMES W. SMITH, JR.
COORDINATOR OF MINED
LAND DEVELOPMENT

Enclosure: MRP, copy 6 of 6

JWS/CY:btb

STATE OF UTAH
NATURAL RESOURCES & ENERGY
Oil, Gas & Mining

Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Cleon B. Feight, Division Director

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

May 12, 1982

Mr. Dee C. Hansen
State Engineer
Division of Water Rights
1636 West North Temple
Salt Lake City, Utah 84116

RE: Mine Plan Submittal
Kaiser Steel Corporation
South Lease Mine
ACT/015/008
Emery County, Utah

Dear Mr. Hansen:

Enclosed please find one copy of the above referenced Mining and Reclamation Plan (MRP). The MRP is being forwarded for review by the Dam Safety and Water Rights sections of your office in accordance with our Divisions' Memorandum of Understanding (MOU).

As you will recall, the MOU between our Divisions' calls for the following for the Dam Safety Section:

B. Mine Plan Review:

1. Upon submission of a mining and reclamation plan to DOGM, the DOGM will forward a copy of the mining and reclamation plan to Dam Safety. If information additional to that contained in the operator's submission is required, Dam Safety is responsible for contacting the operator to obtain such information. Copies of such requests and also copies of the company's submittal in response to the request will be submitted to DOGM.

2. Within 30 days of receipt of the mining and reclamation plan, Dam Safety shall contact DOGM with their final response to the agency's proposed action on the operator's application.

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3. If Dam Safety proposes to reject the plan for failure to meet water retention safety standards, the DOGM will call a conference between the state and the operator at the earliest possible date.

The Division appreciates your cooperation and asks that all comments and communications, regarding the mining and reclamation plan review, be channeled through this office to allow a single set of stipulations and requirements to be sent to the operator. If you have any questions, please contact myself or Cy Young of my staff.

Sincerely,

JAMES W. SMITH, JR.
COORDINATOR OF MINED
LAND DEVELOPMENT

Enclosures: MRP, copy 5 of 6

JWS/CY:btb

STATE OF UTAH
NATURAL RESOURCES & ENERGY
Oil, Gas & Mining

Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Cleon B. Feight, Division Director

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

May 12, 1982

Mr. Douglas F. Day, Director
Division of Wildlife Resources
1596 West North Temple
Salt Lake City, Utah 84116

ATTENTION: Souteastern Regional Office

RE: Mine Plan Submittal
Kaiser Steel Corporation
South Lease Mine
ACT/015/008
Emery County, Utah

Dear Mr. Day:

Enclosed please find one copy of the Mining and Reclamation Plan (MRP) referenced above. This MRP is forwarded for review by the Division of Wildlife Resources in accordance with our Divisions' Memorandum of Understanding (MOU).

As you may recall, the MOU between our Divisions' calls for the following:

B. Mine Plan Review

1. Upon submission of a mining and reclamation plan to DOGM, the DOGM will notify the DWR in writing of the need for consultation in evaluation of the plan with respect to fish and wildlife resources as required by MC 786.17(a)(2). DOGM will provide a copy of such plan to DWR when available.

2. The DWR will respond to DOGM in writing within 60 days of receipt of the plan with an evaluation of the adequacy or inadequacy of the fish and wildlife plan submitted by the operator to avoid, ameliorate or mitigate impacts of the proposed operation on wildlife resources.

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The Division appreciates your cooperation and asks that all comments and communications, regarding the mining and reclamation plan review, be channeled through this office to allow a single set of stipulations and requirements to be sent to the operator. If you have any questions, please contact myself or Cy Young of my staff.

Sincerely,

JAMES W. SMITH, JR.
COORDINATOR OF MINED
LAND DEVELOPMENT

Enclosure: MRP, copy 3 of 6

JWS/CY/btb

STATE OF UTAH
NATURAL RESOURCES & ENERGY
Oil, Gas & Mining

Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Cleon B. Feight, Division Director

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

May 12, 1982

Ms. Carolyn M. Jones
Associate A-95 Coordinator
State Clearinghouse
Environmental Coordination Committee
124 State Capitol
Salt Lake City, Utah 84114

RE: Mine Plan Submittal
Kaiser Steel Corporation
South Lease Mine
ACT/015/008
Emery County, Utah

Dear Ms. Jones:

This letter is submitted to the Environmental Coordination Committee (ECC), as notification that this Division has received a permit application from (Company Name), to commence coal mining activities in State Sections 35 and 36, Township 16 South, Range 14 East; Section 31, Township 16 South, Range 15 East; Sections 1 and 12, Township 17 South, Range 14 East; Section 6 and 7, Towship 17 South, Range 15 East, Emery County, Utah.

This Division will proceed with its review of said application, concurrently with the following State agencies: Division of State Health; Division of Wildlife Resources; Division of State History; and, the Division of Water Rights.

Upon completion of the review process, and prior to approval, a technical and environmental assessment (TEA) will be drafted and submitted to your office.

If you or members of the committee have any questions, please contact Cy Young of my staff.

Sincerely,

JAMES W. SMITH, JR.
COORDINATOR OF MINED
LAND DEVELOPMENT

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state of utah

(File ACT/015/008, copy to Sue & Steve. JIM

DIVISION OF WILDLIFE RESOURCES

MAY 0 4 1982

FROM: John Livesay

DATE: April 30, 1982

TO: Doug Day

ATT: Darrell Nish

SUBJECT: Kaiser South Lease--Mule Deer Study and Mitigation

Enclosed is a "Study Design" and the Region's review comments. Before the comments are forwarded to Kaiser Steel and their consultant (Curt Jansen), please have RAS and Game Management review. Our concerns revolve around the following major points.

1. Does a mine have the prerogative to conduct such a study?
2. The deer herd is currently at about one-fourth of carrying capacity. Measured responses of the herd to mining at this level may be different than the response at carrying capacity.
3. The Interagency Committee no longer accepts conclusions based upon browse studies.
4. There is some concern that evaluation of data would rely on a variation as high as 20 percentage points as the criteria for recognizing changes in deer use. Our concern is even more elevated over the position in the draft that at least a 30 percent reduction in use by deer would have to occur before mitigation planning would be deemed necessary. Both of the aforementioned criteria should be of equal values and the level of variation to be recognized as significant would be <u>any</u> reduction satisfying the 10 percent level of statistical significance; this position by the Division is due to the critical nature of the Little Park area to deer.

5. There is no question among local, professional resource managers that the Little Park area is of critical value to mule deer during winter periods. Loss of critical habitats equates to loss of carrying capacity for the range on the local deer herd. Kaiser's developmental plans clearly identify that 12 ha will be physically altered so as to be unavailable to mule deer and other wildlife throughout the life of the mining project. Possibly an additional 113 ha will become unacceptable or experience a reduction in use by mule deer due to disturbance from the mine development. Thus, mitigation planning is now needed in order to compensate for the certain loss of 12 ha of critical valued habitat. The proposed study could identify the degree of mitigation that will be needed for deer due to impacts in the 113 ha zone. Any reduction in use by mule deer in the 113 ha zone that surrounds the 12 ha surface occupied area would equate as an additional reduction in carrying capacity and would necessitate mitigation planning.

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MAY 0 4 1982
DIVISION OF
OIL, GAS & MINING

Jim Bates is apprehensive of a non-Division entity meddling in our business. He is also concerned about the use of browse measurements. Jim is especially concerned over the fact that current deer numbers are low and that the study results would be based upon such a low density of deer. Jim and Larry each agree on this problem and both share the concern that a response by deer to a coal mine may well be influenced by density dependent factors.

Larry Dalton recommends that the study be carried out by the Company's consultant as long as the study design is modified to incorporate our concerns identified as items 4 and 5. Larry feels that these type of measurements will assist him in future evaluations. He agrees with Jim that browse utilization is a poor method for making management recommendations, but such a technique could prove useful in this type of study.

Please have the appropriate RAS and Game Management staff review this study in light of the Region's concerns and prepare a response to the Kaiser Steel and their consultant (Curt Jansen). A copy of our response should also be forwarded to BLM and DOGM. The addresses are as follows.

Mr. Joe Taylor, Director
Coal Operations and Engineering
Kaiser Steel Corporation
Kaiser Center/300 Lakeside Drive
P.O. Box 58
Oakland, California 94604

Mr. Dave Mills
Bureau Of Land Management
P.O. Drawer AB
Price, Utah 84501

Mr. Curt Jansen
Wildlife Ecologist
Intermountain Scientific Associates
1322 Webster Avenue
Ft. Collins, Colorado 80521

Mr. James Smith
Utah Division of Oil, Gas and Mining
1588 West North Temple
Salt Lake City, Utah 84116

Thank you for your assistance.

John Livesay by H.P.

John Livesay

JL:LBD:JWB:gp

cc: BLM
DOGM
Curt Jansen
Joe Taylor

state of utah

File
ACT/015/008
Copy to Steve
~~Sue~~, Lynn, Mary
JIM

DIVISION OF WILDLIFE RESOURCES

DOUGLAS F. DAY
Director

EQUAL OPPORTUNITY EMPLOYER

1596 West North Temple/Salt Lake City, Utah 84116/801-533-9333

April 29, 1982

Reply To SOUTHEASTERN REGIONAL OFFICE
455 West Railroad Avenue, Box 840, Price, Utah 84501
(801) 637-3310

MAY 12 1982

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MAY 10 1982
DIVISION OF
OIL, GAS & MINING

Mr. Joe Taylor, Director
Coal Operations and Engineering
Kaiser Steel Corporation
Kaiser Center/300 Lakeside Drive
P.O. Box 58
Oakland, California 94604

RE: Kaiser South Lease--Mule Deer Study and Mitigation

Dear Joe:

The Division is currently reviewing the design for a "pre-mine study of mule deer use on the critical winter range in Kaiser Steel's permit area at Little Park Wash." Our response will soon be forthcoming. There is no question among local, professional resource managers that the Little Park area is of critical value to mule deer during winter periods. Loss of critical habitats equates to loss of carrying capacity for the range on the local deer herd. Kaiser's developmental plans clearly identify that 12 ha will be physically altered so as to be unavailable to mule deer and other wildlife throughout the life of the mining project. Possibly an additional 113 ha will become unacceptable or experience a reduction in use by mule deer due to disturbance from the mine development. Thus, mitigation planning is now needed in order to compensate for the certain loss of 12 ha of critieal valued habitat.

Joe, development of Kaiser's South Lease will result in impacts to wildlife other than deer. Possibly, some of the impacts can be characterized, but many of the impacts cannot be clearly identified or evaluated. Some of the subtle impacts on wildlife from habitat alteration and additional people attracted to the area due to the coal mining industry are of an undefinable nature. As you know the Division has developed an educational program that can be directed to the mining employee. If the program were implemented it would serve as satisfactory mitigation for a host of impacts associated with Kaiser's coal developments. Curt Jansen has previewed this training program and I am sure that he will recommend it to Kaiser as a truly valid and acceptable mitigation technique for part of a complex problem.

GOVERNOR
Scott Matheson

DEPT OF NATURAL RESOURCES
Gordon E Harmston
Exec Director

WILDLIFE BOARD
Roy L Young
Lewis C Smith
Warren T Harward

Thank you for an opportunity to review the study proposal and discuss mitigation with your Company. Kaiser's concern for Utah's wildlife is appreciated.

Sincerely,

John Livesay

John Livesay, Supervisor
Southeastern Region

JL:LBD:gp

cc: Darrell Nish
BLM
DOGM
Curt Jansen

STATE OF UTAH
NATURAL RESOURCES & ENERGY
Oil, Gas & Mining

Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Cleon B. Feight, Division Director

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

April 28, 1982

Mr. Curt Jansen
1322 Webster Avenue
Fort Collins, Colorado 80524

RE: Proposed Mule Deer Study for
the Kaiser South Lease Project
PRO/015/008
Emery County, Utah

Dear Mr. Jansen:

In regards to the design of the proposed premine study of mule deer use on critical winter range in the Little Park Wash permit area, the following questions have been raised:

1. How many browse utilization transects are to be used on each site? How will they be selected and arranged, and what will the dimensions of each one be?

2. It is stated that "browse utilization and snow depth will be monitored during the life of the study." How long will the study be conducted?

3. When would the proposed disturbance be initiated? Will there be time to gather adequate before-impact baseline data mentioned in prerequisite #1 on page 3?

4. What mitigation plans are proposed if there is a decline in the density of mule deer after the disturbance is initiated?

These questions should be addressed before initiating the study. Also, the Utah Division of Wildlife Resources may have additional comments on the design of the study and on critical migration routes in the area which should be considered. They should be contacted before beginning the study.

If you have additional questions or comments, please write or call me at (801) 533-5771.

Sincerely,

Steven G. Cox

STEVEN G. COX
RECLAMATION BIOLOGIST

SGC/btb

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RECEIVED
APR 19 1982
DIVISION OF
OIL, GAS & MINING

Curt Jansen
1322 Webster Avenue
Fort Collins, CO 80524

Ms. Susan Linner
Reclamation Biologist
Division of Oil, Gas and Mining
4241 State Office Building
Salt Lake City, UT 84114

Dear Susan:

Enclosed is a copy of the study design for the Kaiser South Lease project. The major change from the preliminary design is in the methods section: pellet plot-counts will be used instead of line transect sampling.

If you have any questions or comments, you can reach me at the above address. My new phone number is (303) 221-3241.

Sincerely,

Curt

Curt Jansen

CJ:jl

STUDY DESIGN

Kaiser Steel

Little Park Wash, Permit Area

A Pre-mine Study of Mule Deer Use of

Critical Winter Range

INTRODUCTION

Kaiser Steel Corporation (hereafter Kaiser) plans to develop an underground coal mine in Emery County, Utah. The Mine Permit Area is located along the eastern side of the Price River Valley and extends east of the Book Cliffs. An application for a mine permit is nearing completion and will be submitted to regulatory authorities by 1 May 1982.

Temporary surface facilities affecting 12 ha will be constructed in Little Park Wash. Portions of Little Park and Little Park Wash have been designated critical mule deer winter range by the Utah Division of Wildlife Resources (DWR). Deer are usually on the winter range between 1 November and 15 May (DWR 1981a). During this period, Kaiser will use a helicopter to ferry personnel and material to the site from the base of the cliffs to avoid impacts that might occur if the Little Park road was to be the primary access route. The effects of construction and operation of the facilities will therefore be localized to the site in Little Park Wash.

Kaiser is prepared to mitigate the potential impacts of construction and operation but there is insufficient information to proceed with the planning effort. The study described below is designed to provide the additional information for purposes of planning mitigation measures. A brief discussion of several key issues will set the background for the study design.

Critical Mule Deer Winter Range

The DWR defines critical [habitat] as a "sensitive use area" necessary to sustain the existence and perpetuation of one or more species of wildlife during crucial periods in their life cycles (DWR 1981a). Critical range is an area where deer concentrate when other winter range is unavailable due to snow depth. Two variables that underly the critical designation are abundance and carrying capacity. Deer abundance on critical winter range is largely a function of snow depth on winter range outside the critical area. The upper limit on abundance on critical range is theoretically attained when the range is at carrying capacity.

Potential Impacts

A potential impact is that the project will reduce the carrying capacity of the winter range due to habitat loss. Site disturbance is a direct loss of habitat; an indirect loss may be caused by noise and other negative stimuli (e.g., odors) which radiate outward from their source. Deer may remain outside an area where the stimuli are perceived as negative: an "intolerance zone." All or some of the habitat within the zone that may be unused by deer would be a habitat loss.

STUDY DESIGN

The proposed study is an impact study. An impact study has been defined by Green (1979) as one whose purpose is to determine whether a specified impact causes change in a biological community and, if it does, to describe the nature of that change. He lists four pre-requisites for an optimal impact study design:

1. The impact must not have yet occurred, so that before-impact baseline data provide a temporal control to which the after-impact data can be contrasted,
2. the type of impact and time and place of occurrence must be known so that a sampling design appropriate to tests of hypotheses can be formulated,
3. it must be possible to obtain measurements on all relevant biological and environmental variables in association with the individual samples, and
4. an area that will not receive the impact must be available to serve as a control.

Prerequisites 1, 2 and 4 are met for theproposed study; prerequisite 3 is discussed below.

Abundance

A biological variable to be measured is deer abundance. Abundance can be measured as the number of animals in a population or as the number of animals per unit area (density)(Caughley 1977). Because population size has meaning only in reference to a geographical unit and is difficult to determine with most wildlife species, density is the unit of measurement that will be used in this study.

Browse Utilization

Browse plants are an important component of most mule deer winter ranges. Although deer adapt to a wide range of forage types and phenological conditions, winter browse is often a limiting factor (Wallmo 1978). To assess the impacts of project development it will

be necessary to measure changes in browse utilization as well as deer density. The assumption is that the degree of impact to deer displaced by the project will be determined by the availability and condition of browse outside the intolerance zone.

Snow Depth

Heavy snowstorms cause deer to migrate to a winter range in the fall. This migration is a behavioral response whose function is to alter the balance between heat loss and heat production, i.e., thermoregulation (Moen 1973). The critical deer winter range designation means that during severe winters, there will generally be forage available in Little Park and Little Park Wash when it is unavailable in the surrounding areas. However, it is possible for the reverse to occur. With this situation the deer density would decline on the critical range. If severe winter conditions happened to coincide with project development, a decline in deer density could be wrongly attributed to the project. To avoid this possibility, snow depth will be measured on the project site and on a control site located in Little Park. Trends in snow depth will then be compared with trends in deer density.

Objective

The objective of the study is:

To determine if the construction and operation of the temporary mine facilities in Little Park Wash causes a change in the density of deer in the vicinity of the construction area.

Methods

The location of the test and control sites is shown in Figure 1. The test site includes the area disturbed by facility construction plus the estimated area in the intolerance zone. The basis for the estimation was published information regarding big game avoidance of use areas (DWR 1981b).

The DWR (1981b) reviewed the literature for a study of the proposed Sage Point-Dugout Canyon coal mining project. Avoidance by elk was observed up to 800 m from roads (Perry and Overly 1976) and at least 800 m from logging operations (Ward 1973) and out-of-vehicle recreational activities (Ward 1976). Avoidance by deer was observed up to 400 m from roads depending on the type of road and habitat (cover) through which the road passed (Rost and Bailey 1979). The area needed for facility construction is 12 ha which was assumed to be circular in shape for convenience of calculation. The intolerance zone extends 600 m outward from the construction area. The construction activity would presumably be more disturbing to deer than road traffic so 200 m was added to the maximum avoidance distance from roads reported by Rost and Bailey (1979).

Approximately 69 ha or 36 percent of the test site extends to the west of the cliffs and is unavailable to deer. The 12 ha needed for facility construction will become unavailable as construction progresses. The remaining 113 ha in the intolerance zone is available to deer and will be the test area. The control area is also 113 ha. The control site was located to include a BLM browse utilization transect.

The tentative method for estimating deer density was direct counts by line transect sampling. A pilot study was conducted in

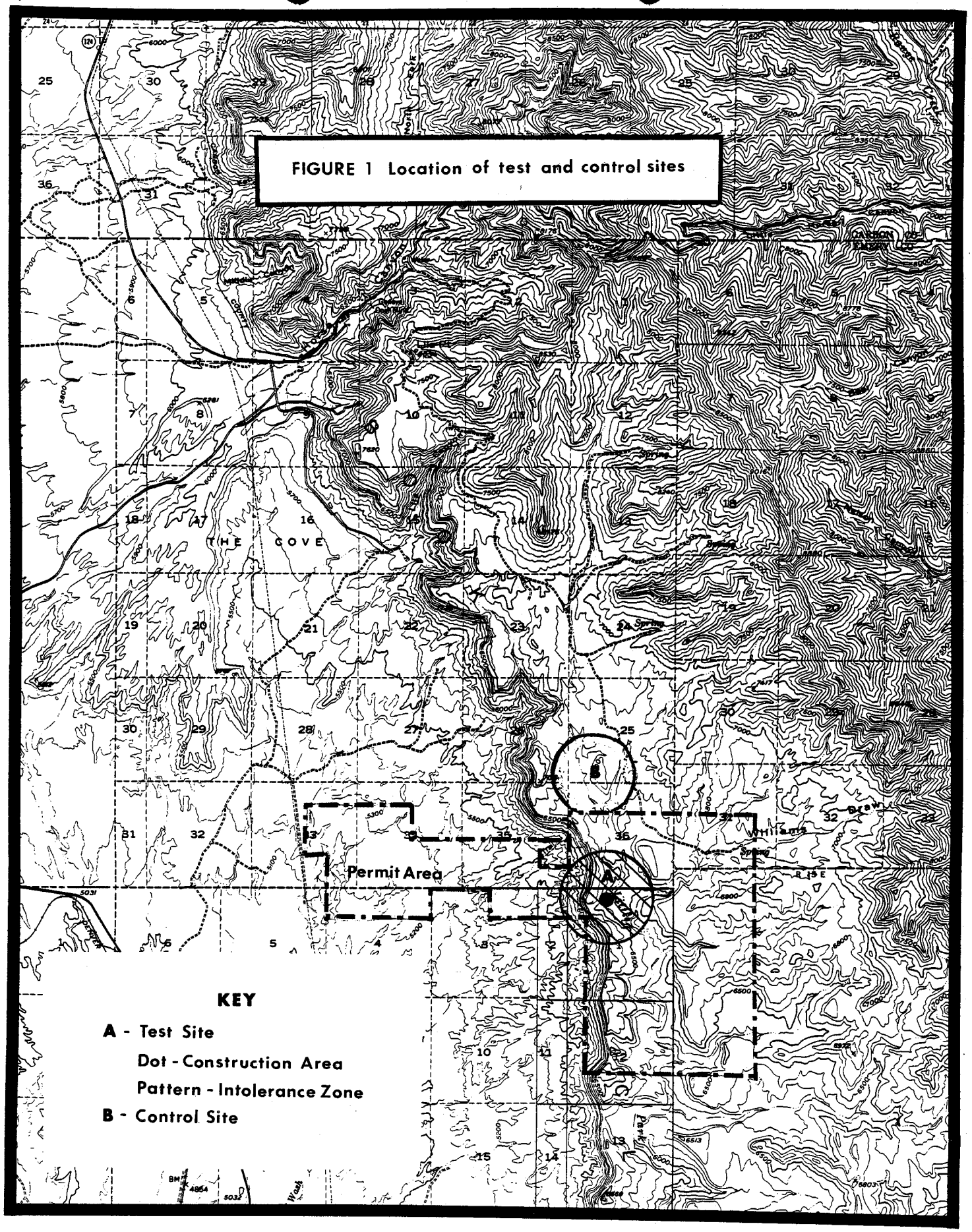

FIGURE 1 Location of test and control sites

February to determine if this method was feasible. The proposed control and test areas were extensively hiked and only deer sign was observed so the direct count method was abandoned.

The pellet-group count method produces an index of animal density; the relative densities of the experimental sites will be compared over time. Locations for 100 pellet-group plots (50 in each experimental site) will be randomly selected and permanently marked. The plot dimensions will be 4 x 22 m. The plots will be initially cleared in the fall of 1982. Thereafter, they will be read and cleared each spring and fall.

The vegetation types found on the sites are sagebrush and pinyon-juniper. The distribution of pellet-groups on these strata will be determined by walking transects prior to plot location. The distribution of plots will be proportioned to the distribution of pellet-groups on the strata.

Browse utilization transects will be located in each experimental area. The BLM transect in the control area will be used for this study. Utilization will be measured by tagging branches and measuring all annual growth above the tag before winter use begins. The same annual growth stems will be measured the following spring before new growth starts. The fall length minus the spring length is the amount utilized during the winter. This amount divided by the fall length is the percent utilization.

The snow depth will be measured at the permanent marker of each pellet plot. Readings will be taken in December, February and April.

Mitigation Planning

An impact to deer will have occurred if the following conditions are met.

1. The density of deer on the test site declined relative to pre-construction density.
2. The density on the control site remained the same or increased. The density could also decline but only if the density on the test site declined at a rate that exceeded the rate of decline on the control site by 20 percentage points.

All differences will be tested at the 5 percent level of significance.

Browse utilization and snow depth will be monitored during the life of the study. Measurement trends will be related to density trends although there is not enough known about the relationships between these variables and deer density to include them as a condition for impact. However, they will be inputs to the decision process regarding mitigation planning.

Condition one states that a decline in deer density on the test site will be indicative of an impact. The impact would include the decline on 113 ha as well as the loss of 12 ha to facility construction. The possible severity of impact ranges from the loss of only 12 ha to the loss of 125 ha (12 plus 113) of deer habitat. Mitigation planning will proceed if there is more than a 30 percent decline in density on the test site (not including the construction area). Thirty percent is an arbitrary number as is the difference of 20 percent in condition 2. We feel that these numbers provide a reasonable justification for mitigation planning. The 30 percent represents a decision

point: mitigation planning is justified by an impact more than or equal to a 30 percent decline in deer density.

Literature Cited

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_____. 1976. Elk behavior in relation to timber harvest operations and traffic on the Medicine Bow Range in southcentral Wyoming. Pages 32-43 in Elk-Logging Roads Symposium Proc. University of Idaho, Moscow.

United States Department of the Interior
OFFICE OF SURFACE MINING
Reclamation and Enforcement
BROOKS TOWERS
1020 15TH STREET
DENVER, COLORADO 80202

April 27, 1982

To Jim
File
ACT/015/008
~~Copy to Cy & EV~~
JIM

MAY 12 1982

Mr. Keith Burnett
Southeast Utah Association of Local Governments
Drawer AI
Price, Utah 84515

Dear Mr. Burnett:

This letter is to confirm the May 12, 1982 meeting in Salt Lake City for the purpose of discussing the enclosed materials relative to Kaiser Steel's proposed South Lease Mine. The meeting will be held in Room 428, State Capitol Building at 1:00 p.m. The enclosed agenda outlines the major objectives for the meeting.

In our April 6, 1982 letter to Kaiser Steel we stated that, although a formal third party contract between OSM, Kaiser Steel and the University was not necessary, it would be desirable to have a Memorandum of Agreement (MOA) documenting consensus on the intent and scope of the proposed socioeconomic analysis. As requested by representatives of Carbon and Emery counties, we have included their participation in the draft agreement (enclosed). The contents of the MOA will be further discussed on May 12.

If you have any additions to the proposed agenda or questions regarding the meeting, please contact Ms. Sarah Bransom at (303) 837-5656.

Sincerely,

Richard E. Dawes

Richard E. Dawes
Deputy Administrator
Western Technical Center

RECEIVED
MAY 04 1982
DIVISION OF
OIL, GAS & MINING

5-13-82

lor

ver

Cy, EV,
I got too busy
& didn't go to
the mtg.
Jim

United States Department of the Interior
OFFICE OF SURFACE MINING
Reclamation and Enforcement
BROOKS TOWERS
1020 15TH STREET
DENVER, COLORADO 80202

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Sincerely,

Richard E. Dawes

Richard E. Dawes
Deputy Administrator
Western Technical Center

cc: Ron Daniels, DOGM
Dan Hunter
Richard Walker
Denise Dragoo/Joe Taylor
Gary Tomsic
Brad Barber/Roger Weaver

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MAY 04 1982
DIVISION OF
OIL, GAS & MINING

Proposed Agenda
May 12, 1982

I. Introductions

II. Review Objectives of Meeting

- Opportunity to discuss South Lease Mine permit application
- To reach a consensus on need for further socioeconomic impact analysis of proposed project.
- Review proposal by "Rodger Weaver and Associates" and define Scope of Work
- Discuss draft Memorandum of Agreement

III. Application of Utah Process Economic Demographic Model (UPED) to Proposed Project

Issues to be covered:

a. Component I (as defined in April 7 letter)

- what range of alternative scenarios should be considered?
- what baseline should be used?

b. Component II & III

- should these elements be covered and, if so, at what level of detail?

c. Other

- Human service related impacts?

d. Overall Report Format

IV. Proposed Memorandum of Agreement (MOA)

- Review of Attached Draft

V. Summary

DRAFT PRINCIPLES:

MEMORANDUM OF AGREEMENT

OFFICE OF SURFACE MINING -- KAISER STEEL -- CARBON COUNTY -- EMERY COUNTY -- STATE OF UTAH, DEPARTMENT OF COMMUNITY AND ECONOMIC DEVELOPMENT

WHEREAS, all parties have agreed that development of an analysis of the potential economic and demographic impacts related to Kaiser Steel's proposed South Lease Mine is desirable, and

WHEREAS, the use of the Utah Process Economic and Demographic Impact Model (UPED) is an acceptable approach to define these potential impacts, and

WHEREAS, the results of the assessment may potentially be used to satisfy statutory requirements including, but not limited to, the National Environmental Policy Act of 1969 and implementing regulations, the Emery County Zoning Resolution (1979), and State of Utah Code Annotated 63-51-1 (Supplemented 1981).

NOW, THEREFORE, it is agreed that:

1. All parties will be involved in developing the Scope of Work;

2. Prior to finalization of the agreement between the contractor and Kaiser Steel, all parties shall review the contract for the purpose of insuring that all topics are covered;

3. All parties shall review and have the opportunity to respond to the key assumptions utilized in the assessment including, but not limited to: employment multipliers, populations projections and allocations, in-migration assumptions, residential patterns, demographic characteristics of South Lease related population, household size, and revenue/expenditure data;

4. All parties shall reach consensus on the Baseline projections and alternative development scenarios to be utilized in the assessment process;

5. A draft report shall be produced and reviewed by all parties within the time-frame established by Kaiser Steel and the contractor. The contractor shall respond to all comments and issues raised within this review period prior to development of the final report;

6. Nothing in this agreement shall be construed as binding the parties to the assessment results produced by the contractor. Other sources of information including, but not limited to: "The Socioeconomic Assessment of the South Lease Mine" (OSM, 1981), the "Central Utah Coal Environmental Impact Statement" (USGS, 1979), and applicable local resource documents may be used in developing appropriate mitigation measures; and,

7. This agreement shall become effective as soon as signed by the parties and shall continue unless formally terminated by any party after thirty days notice in writing.

Rodger Weaver and Associates
1960 East 9th South
Salt Lake City, Utah 84108

April 7, 1982

Joe Taylor
Vice President,
Coal Group
Kaiser Steel Corporation
P.O. Box 58
Oakland, California 94604

Dear Joe:

Pursuant to our discussions of March 16, 1982, I am sending this letter to describe the research project we would be prepared to carry out to assist Kaiser Steel in analyzing the economic and demographic impacts of its proposed South Lease coal mining development. The project is laid out in component form in view of the fact that the South Lease project itself is an evolutionary-developmental. Kaiser can select the components that will prove useful and justify the costs at this time.

Component 1 UPED and SAM Model Impact Projections

This component would be the beginning point for any project. Any number of alternative development scenarios could be analyzed. For each, Kaiser would specify the South Lease direct employment assumptions (number of workers by year), including any offsetting effects at the Sunnyside Mine, and any commuting pattern influences that may be of interest. Projections of the economic and demographic impacts of these scenarios would then be produced at the Multicounty District (MCD) level with UPED and allocated to the Census County Division (CCD) level with SAM. Note that some alternatives would require running only one of the models. Eg., alternative commuting patterns for the same total employment scenario would require only a run of SAM, while for some purposes MCD-level data would suffice and only a UPED run would be required.

For this project, no new Baseline (non-South Lease) projection will be prepared. Rather, the consensus Baseline for the area will be used. A project currently underway to update the existing Baseline is expected to be completed by mid-summer. Work done before that will be based on the existing Baseline or the most current provisional update of it. Pricing of UPED and SAM Model runs will be according to the following schedule:

Cost of UPED and SAM Projections

	First Scenario	Each Additional Scenario
UPED	$500	$300
SAM	$500	$300

Each scenario would require one week after specification of scenario parameters to complete Component 1.

Component 2 Public Service Requirements and Public Expenditure Impacts

Using service requirement standards and guidelines developed from previous studies and/or those presently adopted as State of Utah guidelines by the Division of Community Development, the public service requirements impacts of the various scenarios can be projected. This component would require more analyst time to complete than would Component 1. Therefore, the cost per scenario projected would be higher. It is expected that not all of the scenarios considered will be subjected to public service requirement and expenditure impact analysis. The cost of each performance of this component would depend upon the required level of detail and upon the amount of support narrative to be prepared. It is reasonable to expect, however, that about two person weeks of effort would be sufficient to complete the work. In this case, at a rate of $60 per hour, the cost would be $4,800. It would be reasonable to expect some decrease in per-analysis cost after the first is completed.

Component 3 Local Revenue Impacts

By analyzing the sales and property tax base impacts to be expected from the projected economic and demographic impacts, and adding considerations of other revenue sources, a projection would be produced of local revenues to be generated by the South Lease project.

This procedure would also be more time intensive than Component 1 and will therefore be more costly per analysis than Component 1. Roughly one person week of effort should be expected which, at $60 per hour, would total $3,000. Again, some economies should be expected for repetitions of the analysis for additional scenarios.

Institutional Arrangements

It is proposed that this project be undertaken by Rodger Weaver and Associates rather than by the Bureau of Economic and Business Research at the University of Utah. I would, of course, direct and participate in the study whichever group was contracted to do the work. The same techniques and data bases would be used in either case. The same quantity and quality of work would be performed and the price would be the same.

Joe Taylor
Vice President,
Coal Group
Kaiser Steel Corporation

The workload at the Bureau at this time is such that the study would have to be done on an overtime basis. Those of us that would work on the project feel justified in wanting to do the job as private consultants in order that we can be compensated for the overtime effort.

We appreciate being considered for this important study and look forward to hearing from you at your earliest convenience.

Sincerely,

Rodger Weaver

RW:jmt

cc: Brad Barber
Sarah E. Bransom
Denise Dragoo

KAISER STEEL CORPORATION
OAKLAND, CALIFORNIA 94666

KSC 864 R-5

DETACH STATEMENT BEFORE DEPOSITING $

DESCRIPTION	INVOICE NUMBER	DOCUMENT	AMOUNT OF INVOICE	CASH DISCOUNT	BALANCE PAYABLE
Coal Mine Permit Application - South Lease Property					$5.00

Acct Trans #'s
PR0/015/008

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OIL, GAS & MINING

To Jim
File
ACT/015/008

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DIVISION OF
OIL, GAS & MINING
JIM
APR 23 1982

April 6, 1982

Ms. Denise Dragoo, Esq.
Fabian and Clendenin
800 Continental Bank Building
Salt Lake City, Utah 84101

Dear Ms. Dragoo:

As you requested, Sarah Bransom, Community Planner with the OSM Western Technical Center, has investigated the potential of initiating a "third party contract" to assess the socioeconomic impacts of the Kaiser Steel's proposed South Lease Mine. If Kaiser's contract with the University of Utah produced an assessment that OSM would utilize as the sole authority on the subject, we believe a third party arrangement would be appropriate.

In this case, OSM contracted with Hittman Associates in December 1981 for the development of a socioeconomic impact assessment of the South Lease Mine; therefore, we would use this study in conjunction with the results produced by the University. Thus, a third party contract is not necessary. It would be desirable, however, for all parties to agree upon the University's proposed Scope of Work to avoid potential conflicts regarding the methods, assumptions and results of the assessment. This agreement should be documented in a Memorandum of Understanding.

At the March 16, 1982 meeting in Salt Lake City, Ms. Bransom emphasized that Emery and Carbon County officials should be involved in the assessment process. OSM recommends that all parties, including appropriate county officials, meet to discuss the proposed Scope of Work and confirm their agreement with its contents in the Memorandum of Understanding. This approach would benefit OSM, as well as Kaiser, to help insure that the results of the assessment are acceptable to local officials.

We would appreciate your timely response to this approach. If you have any questions, please contact Ms. Bransom at (303) 837-5656.

Sincerely,

Richard E. Dawes
Deputy Administrator
Western Technical Center

cc: Joe Taylor
Ron Daniels

ACT/015/008

KAISER STEEL

KAISER STEEL CORPORATION
EXECUTIVE OFFICES ■ KAISER CENTER
300 LAKESIDE DRIVE ■ P.O. BOX 58 ■ OAKLAND, CALIFORNIA 94604
(415) 271-2711 ■ CABLE ADDRESS: KAISTEEL ■ TELEX: 33-5315

April 7, 1982

Mr Cleon B. Feight, Director
Division of Oil, Gas and Mining
State of Utah Natural Resources & Energy
4241 State Office Building
Salt Lake City, Utah 84114

Dear Mr. Feight:

Re: Application for a Mine Permit
South Lease Coal Property
Emery County, Utah

Kaiser Steel Corporation is submitting to you under separate cover six copies of an application for a permit for an underground coal mine at its South Lease Coal Property in Emery County, Utah. The required $5.00 permit application fee is submitted herewith.

Copies of this application are being delivered to governmental authorities as shown on the attached list.

It is Kaiser Steel Corporation's understanding that, in the event regulations governing permit applications for underground coal mining operations are substantially changed, we will be allowed to submit a modified application consistent with such changed regulations.

Sincerely yours,

KAISER STEEL CORPORATION

Joe T. Taylor
Vice President, Coal Group

JRB:ef
Enclosures(2)

cc: Douglas C. Pearce
Kaiser Steel Corporation
Sunnyside Mines
P.O. Box D
Sunnyside, Utah 84539
Phone (801) 888-4421

RECEIVED
APR 12 1982
DIVISION OF
OIL, GAS & MINING

KAISER STEEL CORPORATION - SOUTH LEASE COAL PROPERTY

Mine Permit Application

Distribution to Governmental Authorities

Mr. Richard E. Dawes, Deputy Administrator — 7 copies
Western Technical Center
Office of Surface Mining, Reclamation and Enforcement
U. S. Department of the Interior
Brooks Tower
1020 - 15th Street
Denver, Colorado 80202

Mr. Cleon B. Feight, Director — 6 copies
Division of Oil, Gas and Mining
State of Utah Natural Resources & Energy
4241 State Office Building
Salt Lake City, Utah 84114

Mr. Paul Pratt, Lands Specialist — 1 copy
Division of State Lands & Forestry
State of Utah Natural Resources & Energy
Post Office Box 32
Moab, Utah 84532

Mr. Rue Ware, Commissioner — 1 copy
Emery County Planning Board
c/o Mr. Glenn P. Bott, Emery County Clerk
Post Office Box 493
Castle Dale, Utah 84513

Ms. Ina Lee Magnuson, Recorder - Emery County
Emery County Court House
Post Office Box 698
Castle Dale, Utah 84513

1 copy for public inspection

4/8/82

KAISER STEEL CORPORATION

90-1
1211

ENDORSEMENT OF THIS CHECK IS AN ACKNOWLEDGEMENT OF FULL SETTLEMENT OF ACCOUNT AS PER ATTACHED STATEMENT

TO **BANK OF AMERICA**
NATIONAL TRUST AND SAVINGS ASSOCIATION
OAKLAND MAIN OFFICE
OAKLAND, CALIFORNIA 94612

DATE Apr. 5, 1982 NO. 042-15023

PAY EXACTLY **5.** DOLLARS AND .00 CENTS $5.00**

TO THE ORDER OF
State of Utah
Natural Resources & Energy
Division of Oil, Gas, and Mining
4241 State Office Building
Salt Lake City, Utah 84114

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GENERAL ACCOUNT

H. D. Haug Jr.

KAISER STEEL CORPORATION
OAKLAND, CALIFORNIA 94666

KSC 864 R-5

DETACH STATEMENT BEFORE DEPOSITING $

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Coal Mine Permit Application - South Lease Property					$5.00

RECEIVED
APR 13 1982
DIVISION OF
OIL, GAS & MINING

File PR0015/008

February 10, 1982

Ms. Susan Linner
Division of Oil, Gas, And Mining
4241 State Office Building
Salt Lake City, Utah 84114

Dear Ms. Linner:

Enclosed is a copy of my Preliminary Study Design as per our phone conversation on 8 February 1982. I'll be in the field conducting the pilot study during the next several days. I'll contact you when I'm back in my office to let you know how it went.

Sincerely,

Curt

Curt Jansen

RECEIVED
FEB 16 1982
DIVISION OF
OIL, GAS & MINING

PRELIMINARY STUDY DESIGN

Kaiser Steel

Little Park Wash, Permit Area

A Pre-mine Study of Mule Deer Use of

Critical Winter Range

INTRODUCTION

Kaiser Steel Corporation (hereafter Kaiser) plans to develop an underground coal mine in Emery County, Utah. The Mine Permit Area is located along the eastern side of the Price River Valley and extends east of the Book Cliffs. An application for a mine permit is nearing completion and will be submitted to regulatory authorities by 1 April 1982.

Temporary surface facilities affecting 29 acres will be constructed in Little Park Wash. Portions of Little Park and Little Park Wash have been designated critical mule deer winter range by the Utah Division of Wildlife Resources (DWR). Deer are usually on the winter range between 1 November and 15 May (Fish and Wildlife Resource Information submitted to Kaiser Steel by the Division of Wildlife Resources, March 1981). During this period, Kaiser will use a helicopter to ferry personnel and material to the site from the base of the cliffs to avoid impacts that might occur if the Little Park road was to be the primary access route. The effects of construction and operation of the facilities will therefore be localized to the site in Little Park Wash.

Kaiser is prepared to mitigate the potential impacts of construction and operation but there is insufficient information to proceed with the planning effort. The study described below is designed to provide the additional information for purposes of planning mitigation measures. A brief discussion of several key issues will set the background for the preliminary study design.

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that underly the critical designation are abundance and carrying capacity. Deer abundance on critical winter range is largely a function of snow depth on winter range outside the critical area. The upper limit on abundance on critical range is theoretically attained when the range is at carrying capacity.

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A potential impact is that the project will significantly reduce the carrying capacity of the winter range due to habitat loss. Site disturbance is a direct loss of habitat; an indirect loss is caused by noise and other negative stimuli (e.g. odors) which radiate outward from their source. Deer will remain outside an area where the stimuli are perceived as negative: an "intolerance zone." All habitat within the zone is unavailable to deer and thus is considered a habitat loss.

PRELIMINARY STUDY DESIGN

The proposed study is an impact study. An impact study has been defined by Green (1979) as one whose purpose is to determine whether a specified impact causes change in a biological community and, if it does, to describe the nature of that change. He lists four prerequisites for an optimal impact study design:

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Another biological variable that will be measured is browse utilization. Browse utilization is a correlative of carrying capacity.

An environmental variable that will be measured is snow depth. It is assumed that snow depth is the major influence of deer movement during winter months.

Objectives

The objectives of the study are:

1. To determine if the construction and operation of the temporary mine facilities in Little Park Wash causes a change in the density of deer in the vicinity of the project site.
2. To determine if there is a change in browse utilization that can be attributed to a change in deer density.

Methods

Estimates of deer density will be obtained by line transect sampling. Transects will be randomly located in the vicinity of the project site and in an area that will remain undisturbed by mining activity (control site). Transects will be permanently established and will be surveyed on three separate occasions in November, January and March. The survey width will be infinity, $w = \infty$. A pilot study will be conducted to determine the transect length. The transect length should allow the observation of at least 40 deer to enable proper statistical analyses. Transect length will be determined by:

$$L = \frac{b}{(cv(\hat{D}))^2} \left(\frac{L_1}{n_1}\right).$$

where L is the total transect length; $cv(\hat{D})$ is the coefficient of

variation of the density; L_1 is the total transect length of the pilot study and n_1 is the number of deer observed during the pilot study (Burnham et al. 1980). The coefficient of variation is provided by the survey planner and the value of b is an unknown for the amount of data available in the pilot study, but a range of values for large scale studies has been found to be 1.5 to 3 (Burnham et al. 1980).

Additional data that will be collected during the pilot study will be track observations and counts of pellet groups. These data can be used to develop another method to index deer density, if the line transect sampling technique is unsatisfactory.

Browse utilization data will be collected from existing permanent transects in Little Park. Agency personnel will be contacted for information regarding these transects to determine if the data generated meets the needs of the impact study.

Excessive snow depth on the critical range could cause a decline in deer density. To avoid attributing a decline to mining activity when snow depth is the ultimate cause, snow depth will be measured in both transect areas.

The final study design will be developed after the pilot study has been completed and agency personnel have reviewed this preliminary document. Specific details of study methodology will be provided in the final study design.

LITERATURE CITED

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